CARETAKER MARIJUANA USE AND RISK OF CHILD MALTREATMENT


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by


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Division of Social Work

Abstract

of

CARETAKER MARIJUANA USE AND RISK OF CHILD MALTREATMENT

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This study is a comparative analysis of caretaker marijuana use and the risk of child maltreatment. The design of the study is an exploratory quantitative design that utilizes secondary data from the LONGSCAN consortium of research studies. The original data set collected information on caretaker's marijuana use through in-person interviews with participants. Child maltreatment data was collected by reviewing Child Protective Services' records every two years for the 18-year duration of the study of the LONGSCAN study. The LONGSCAN study utilized non-probability sampling method to recruit 1,354 participants across five collection sites across the country. The current study analyzed the data collected specific to caretaker marijuana use and substantiated maltreatment events for all 1,354 participants. Chi-square tests were used to determine the relationship between caretaker marijuana use and substantiated maltreatment events. There were no statistical differences found between current or past caretaker marijuana use and substantiated maltreatment events. There was statistical significance found between frequency of

caretaker marijuana use and child maltreatment.  However, the data revealed that 95% of

participants did not disclose marijuana use or have substantiated maltreatment events.  This

study demonstrates the need for further research into the subject of caretaker marijuana use

and child maltreatment as well as the need for social workers to understand the potential

impact of caretaker marijuana use on children in the child welfare system.


_____, Committee Chair
Maria Dinis, Ph.D., M.S.W.



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TABLE OF CONTENTS

LIST OF TABLES

# LIST OF FIGURES

Chapter 1

**INTRODUCTION**

Marijuana use and its decriminalization are one of the most controversial political

platforms in society today. The positive public opinion of marijuana consumption,

legalization, and decriminalization is sweeping the nation. There has been much time,

research, and critical analysis given to the physiological effects of marijuana, but not to

the overall impact on families. This recent nationwide shift of acceptance in nonmedical

marijuana use has unknown implications for parents and families. Specifically, how

marijuana use by parents/caretakers can potentially impede the ability to care for their

children in the home and meet the demanding responsibilities and demands that raising

children entails.

While the Northwest countryside moves towards legalization of marijuana, there

is a concern as to how child protective services (CPS) will be able to accommodate the

influx of referrals. Currently, the child welfare system (CWS) is inundated with reports

of child maltreatment and has difficulty meeting the needs of all referrals. New

assessment tools will need to be created to analyze what extent marijuana use alters the

parent/caretaker's focus, energy, and overall ability to care for their children? What

behaviors are associated with marijuana use that has the potential to harm the children?

How will the legalization and decriminalization of marijuana impact the family

household? What possible role will CPS and social workers play in assessing the safety

of these households? To date, there is minimal research related to these questions. The

lack of research in this field may be a factor in why there is presently no guidelines or

assessments used by child welfare agencies to determine the level of risk associated with marijuana use in the home.

The National Survey on Drug Use and Health (NSDUH, 2014) indicates that marijuana is the most commonly used illicit drug in the United States (National Institute on Drug Abuse, 2016). The scope of marijuana users participating in the 2014 survey included adolescents. The potential increase in marijuana use by adolescents is the most commonly reported argument in opposition to legalization. However, legalization will potentially increase use amongst caregivers of minor youth, indicating a need to fully evaluate any potential harm to children of marijuana users (Schydlower, 2002). An increase in accessibility will also impact child welfare worker's assessment and recommendations to the court when marijuana consumption is a related factor with families involved with the agency. This chapter will discuss the background of the problem, statement of the research problem, the purpose of the study and, the research question. Also, the theoretical framework used to address the topic will be described with definitions of terms used in the study. Assumptions, justifications, and delimitations will be discussed. Finally, a summary will be included.

### Statement of Collaboration

This project was written through the collaboration of researchers Rosemary Jamison and Brenna Lammerding. Jamison was the lead writer for chapter two, while Lammerding was the primary writer of Chapter one. Chapters three through five were written by both researchers together.

**Background of the Problem**

Traditionally, the use of marijuana in western civilization has been viewed as a recreational vice like alcohol. This contrasts with the many healing qualities that have been identified by Eastern medicine practices. The crusade against marijuana prohibition has been a long and slow moving battle. In 1996, the passage of the Proposition 215 Compassionate Use Act enabled individuals and their caregivers the legal right to possess and cultivate marijuana for medicinal purposes (California Department of Public Health, 2013). Opposing politics could no longer maintain the argument that any type of marijuana ingestion directly conflicts with federal law and sends a dangerous message to our children (Lee, 2012). This ideological shift transcended across all party lines where communities agreed medically ill individuals should not be criminalized for marijuana use. Medical marijuana posed the most significant challenge to federal drug prohibition since the passage of the 1937 Marihuana Tax Act (Lee). To circumnavigate the federal law legislators skillfully used the word *recommend* rather than *prescribe* to legitimate patient use. This clever writing enabled physicians to engage patients in a therapeutic relationship with marijuana without breaking the federal Controlled Substances Act (Lee).

In 2001, President George W. Bush was and other politicians began reviving the costly war on drugs. Ironically, President Bush's own children had been cited for underage drinking and rumored marijuana use (Lee, 2012). These allegations placed a direct light on the common practice of targeting certain populations for marijuana-related offenses, whereby poor students were charged with drug violations and received a

suspension of any college financial aid, but the wealthy counterparts were not (Lee). This one-sided approach drug enforcement continued with an insurgence of federal raids and arrests.

In 2006, the Food and Drug Administration (FDA) further complicated the debate surrounding marijuana when they released a memo stating it had no medical value (Lee, 2012). The FDA cited there are no scientific, evidence-based practices to account for any medical benefits from marijuana use. However, the lack of scientific research was largely due to the harsh restrictions under federal law ensuring the failure of any promising data. Despite the lack of data in the United States, Eastern cultures have utilized the medicinal value for centuries.

In 2008, the contentious battle between the benefits and risks, the positive and negatives, and the support or opposition of marijuana use climaxed. President Barack Obama was elected into office alongside an unprecedented support towards the legalization of marijuana. The climate amongst citizens was one of hope and change for the future with the election of the first African-American President. In 2010, Proposition 19 was proposed to legalize marijuana for adults twenty-one and older with some provisions allowing possession and cultivation of small amounts for personal use. As part of the campaign to decriminalize marijuana, Alice Hoffman spoke out about eliminating enforcement practices which target minority populations and persecute underclass citizens far more than their privileged counterparts (Lee, 2012). Regardless of the momentum of the campaign, only eleven out of fifty-eight counties supported the legalization initiative. Opposing parties indicated their concern for the economic

standing of generational family growers who could be left bankrupt (Lee).

Since the failure of Proposition 19 in 2010 advocates have continued to write initiatives

for the legalization of marijuana.  The nation saw the first passage of recreational

marijuana legislation in 2012 with Washington and Colorado.  Following shortly behind

in 2014 Alaska and Oregon adopted recreational marijuana use.  Witnessing the success

and subsequent tax revenue these states garnered gave rise to support from Californians.

In November 2016, California passed Proposition 64 to legalize the recreational use of

marijuana.  It is projected more states will establish their own legislation for the

legalization of marijuana for recreational use.  This forward movement suggests an

overwhelming shift towards social acceptance of marijuana use in the United States.

However, federal law has not changed and the government does not recognize the

difference between medical marijuana and recreational marijuana (Americans for Safe

Access, 2016).  Marijuana continues to be classified as a Schedule 1 drug meaning the

federal government declares it highly addictive with no medical value (Americans for

Safe Access).

## Statement of the Research Problem

Marijuana is being decriminalized throughout the nation and it is imperative

existing government entities, such as CPS, further their alcohol and other drugs (AOD)

abilities.  It is crucial for further research on the psycho-social elements involved in the

habitual use of marijuana to be analyzed.  State governments will be held accountable for

creating and implementing new procedures to address the impact of marijuana use.  For

example, CPS social workers must assess how the caretaker's marijuana use may be a

deficit or a strength to their ability to provide. In one home a caretaker's marijuana use may alleviate crippling anxiety and permit them to manage the household duties. In another home, a caretaker's marijuana use may impede their ability to care because they pass out and leave the children unattended. The unknown variables of caretaker's marijuana use's overall impact on family dynamics and households remains a problem that should concern contemporary social work practice.

## Purpose of the Study

The primary purpose of this study is to analyze data related to how the legalization of recreational marijuana will impact the policies and procedures of child welfare agencies. Little research has been conducted on the relationship between marijuana use and family relations, particularly child maltreatment cases. In addition to identifying what relationship exists between caretaker marijuana use and child maltreatment cases if any, the data used in the current study as part of a large and extensive longitudinal study enables the researchers to explore many other critical elements involved. For example, the demographic information gathered will deepen the understanding of how other societal factors influence the relationship. The findings of this study may reveal a positive connection between caregiver marijuana use and substantiated child maltreatment reports. On the other hand, the study may reveal there is no connection between caretaker marijuana use and child maltreatment. The data gathered in this study has the potential to influence the future of policy-making, program planning, and service delivery of child welfare agencies upon passage of legalization. The secondary purpose is to impact the process and accessibility of obtaining a marijuana

recommendation from a physician. It may also impact the accessibility of obtaining marijuana recommendations.  For example, a physician will inquire if the patient is the primary caregiver for a minor prior to giving a recommendation. The authors are interested in providing comprehensive data to aid in the creation of laws maintaining safety for children and families.  The purpose of this research project includes the promotion of child and family well-being amongst the evolving laws surrounding substances.

## Research Question

This study will investigate the following research question: how does the use of marijuana by a parent/caretaker affect the likelihood of substantiated child maltreatment events.

## Theoretical Framework

The current study utilizes the general systems theory. The subsections below will explain the general systems theory followed by a description of how this theory can be applied to the current research study.  Theories are important to assist in setting a frame of reference or perspective.  General System Theory (GST) is utilized to understand how families, as individuals, are influenced by their ecological surroundings.

**General Systems Theory**

The social work profession has spent recent decades utilizing the application of theory and methods to legitimize itself amongst other behavioral sciences including the medical field.  Specifically, the direct services sector is based on an application of human development theories within a psychosocial context and focuses on diversity.  The

General Systems Theory (GST) looks at reciprocal relationships between individuals, institutions, groups, and the society they construct.

The main principles of GST center on engaging clients on an individual scale, to affect change on the environmental level. The environment consists of interdependence and mutual transactions within our human existence in four domains: the situation and, micro, meso, and macro levels of social systems. As comingling human beings, we create a social system of interconnected interacting units which represents the integration of systems and subsystems. Each individual subsystem is in a constant inevitable state of change. A single readjustment or change in one subsystem will cause alterations in every other system. For example, interpersonal relationships are single entities with boundaries that are reciprocal in nature and contain factors that mutually influence the creation and maintenance of the whole system (NASW, 2003). The boundaries an individual may hold around themselves creates stability when the different subsystems interact. Boundaries create stability for a subsystem, while adaptability allows for the willingness to change. In the pursuit of functionality, systems are adaptive, purposeful, and goal oriented in nature. Balance is created between the systems by the reciprocal nature of their functioning as inputs and outputs channel the constant flow of energy.

The original thinker that explained the forces between systems that established the foundation of GST was cultural anthropologist Gregory Bateson. Andreae (2011) noted that Bateson's background in cybernetics enabled him to gain insight into the application of systems theory to human relationships. Bateson began by looking at how each subsystem affects one another in a reciprocal fashion versus a one-way avenue. The

mathematician Norbot Weiner expanded Bateson's concepts when he described circular mechanisms in relationships as feedback loops. Weiner defined feedback loops as circular responses where a constant return flow of information is disseminated into the system (Andreae).

The concept of GST was further broadened by von Bertalanffy (1981) when he suggested that exchanges of information are not linear; but, in fact, become part of a causal chain influencing one another. von Bertalanffy recognized that no matter the system, such as an integrated universe of symbols, each could not exist without the relations of all forming the whole. His focus was driven on the basis that a complex system made up of parts or interacting elements creates a whole. To this extent, his framework aimed at forging a general perspective of the world as an organization in which each element could be understood in their place within the whole. von Bertalanffy classified living organisms (human beings) as being an open system, which indicates that there is the capacity for growth and elaboration.

The ideas and concepts surrounding behavioral sciences have forever been altered by the theoretical concept and evolution of GST. GST challenges the status quo by analyzing the interconnectedness of personal and public exchanges through the context of the environment in which they occur. This concept of human beings being active systems and not reactive robots is reflected in the works of Piaget, Carl Roger, Abraham Maslow, and Murray Allport.

**Application of General Systems Perspective**

von Bertalanffy's (1981) ideas that shifted the perspective of a one-way exchange of information to a circular exchange becomes most beneficial when applied to social work with families. It is critical for a social worker to understand all parts of a family before beginning to assess individual members. GST guides social workers in identification and assessment of all interpersonal connections their client may hold. To understand an individual client a CPS social worker must understand the context of the world in which the client lives. A social worker will be better able to provide meaningful interventions if they acknowledge the variety of barriers affecting this family. The reciprocal nature of GST offers a unique opportunity to find what the client needs by looking at the opposite of what they already possess. For example, a caregiver who is need of employment may have a difficult time because of their marijuana use. This financial strain will impact their ability to provide basic needs for their children in way of food, clothing, and shelter. A caregiver may be depressed and that inhibits their ability to adequately provide for their children; so, they, in turn, use more marijuana. This coping mechanism can further isolate the caregiver and has the potential to lead to neglectful behavior. Children being neglected will begin to be noticed by teachers when they arrive at school dressed inappropriately for the weather, dirty, and hungry.

A principal of GST emphasizes the importance of openness to allow room for interaction between the input and output. The situation is crucial in presenting information to an individual, allowing them to process it, and offering feedback necessary for building valid conceptions of the outer world (Compton & Galaway, 1989). Social

workers have the unique opportunity to educate caregivers on how their marijuana use may impact their family negatively.  A caregiver can choose to use marijuana but they need to understand the consequences they could face with the government should it impact their children.

## Definition of Terms

The section outlines the terms that are applied within the current research study and are common to the sphere of child welfare.  These terms are defined and briefly described so that the reader may understand and know how they are used throughout this study.

**Marijuana**: Marijuana refers to the dried leaves, flowers, stems, and seeds from the hemp plant, *Cannabis sativa*. The plant contains the mind-altering chemical *delta-9-tetrahydrocannabinol* (THC) and other related compounds. (National Institute on Drug Abuse, 2016).

**Recreational Use**: a drug used without medical justification for its psychoactive effects often in the belief that occasional use of such a substance is not habit-forming or addictive (Merriam Webster's Dictionary online).

**Secondhand smoke:** smoke that is exhaled by a smoker or is given off by burning tobacco, cigar, pipe, etc. and is inhaled by persons nearby (Merriam Webster's Dictionary online).

**Caregiver:** A caregiver is a person, or people, who at the time of the maltreatment is in a permanent (primary caregiver) custodial role. In a custodial role, the person is responsible for care and control of the child and for the child's overall health and welfare. Primary

caregivers must live with the child at least part of the time and can include, but are not limited to, a relative or biological, adoptive, step-, or foster parent(s), a legal guardian(s), or their intimate partner (Arias, Leeb, Melanson, Paulozzi, & Simon, 2008).

**Child:** a person not yet of legal age (Merriam Webster's Dictionary online).

**Child Maltreatment:** Any act or series of acts of commission or omission by a parent or other caregiver that results in harm, the potential for harm, or threat of harm to a child (Arias et al., 2008).

**Acts of Commission:** Words or overt actions that cause harm, potential harm, or threat of harm to a child. Acts of commission are deliberate and intentional; however, harm to a child may or may not be the intended consequence. Intentionality only applies to the caregivers' acts—not the consequences of those acts (Arias et al., 2008). The following types of maltreatment involve acts of commission:

- Physical abuse: Physical abuse is defined as the intentional use of physical force against a child that results in, or has the potential to result in, physical injury (Arias et al., 2008).

- Sexual abuse: Any completed or attempted (non-completed) sexual act, sexual contact with, or exploitation (i.e., noncontact sexual interaction) of a child by a caregiver (Arias et al., 2008).

- Psychological abuse: Intentional caregiver behavior (i.e., the act of commission) that conveys to a child that he/she is worthless, flawed, unloved, unwanted, endangered, or valued only in meeting another's needs. Psychological abuse can be continual (e.g., chronic and pervasive) or episodic (e.g., triggered by a specific

context or situation) (Kairys & Johnson, 2002).

**Acts of Omission:** The failure to provide for a child's basic physical, emotional, or educational needs or to protect a child from harm or potential harm. Like acts of commission, harm to a child may or may not be the intended consequence (Arias et al., 2008). The following types of maltreatment involve acts of omission:

- Failure to provide: Failure by a caregiver to meet a child's basic physical, emotional, medical/dental, or educational needs—or combination thereof (Barnett, Manly, & Cicchetti, 1993).

- Physical neglect: Caregiver fails to provide adequate nutrition, hygiene, or shelter; or, caregiver fails to provide clothing that is adequately clean, appropriate size, or adequate for the weather (Arias et al., 2008).

- Emotional neglect: Caregiver ignores the child, or denies emotional responsiveness or adequate access to mental health care (Barnett et al., 1993).

- Medical/dental neglect: Caregiver fails to provide adequate access to medical, vision, or dental care for the child (Arias et al., 2008).

- Educational neglect: Caregiver fails to provide access to adequate education (Arias et al., 2008).

- Failure to supervise: Failure by the caregiver to ensure a child's safety within and outside the home given the child's emotional and developmental needs (Barnett et al., 1993).

- Inadequate supervision: Failure by the caregiver to ensure that the child engages in safe activities and uses appropriate safety devices; to ensure that the child is not

exposed to unnecessary hazards; or to ensure appropriate supervision by an adequate substitute caregiver (Barnett et al., 1993).

- Exposure to violent environments: Caregiver intentionally13 fails to take available measures to protect the child from pervasive violence within the home, neighborhood, or community (Kairys & Johnson, 2002).

**Substantiated maltreatment cases:** The child welfare agency has determined there is the likelihood that abuse and/or neglect did occur, and intervention is needed (Child Welfare Information Gateway, 2013).

## Assumptions

The objective of this research study occurs under a few assumptions that pertain to marijuana. The first assumption that is made within the current study is that laws pertaining to marijuana legalization and decriminalization will continue to occur at the state level over the next several years. The second assumption made is that once most states have enacted marijuana legalization or decriminalization laws, reforms to federal marijuana laws will follow. The third assumption made is that there will be an increase of marijuana use post legalization. The fourth assumption made concerning marijuana use is that current public perception approves of marijuana use for medicinal purposes, and is moving toward acceptance of its recreational use. The fifth assumption is that regardless of marijuana's legal status, child welfare agencies will continue to consider it a mind-altering substance that impacts parenting ability, and needs to be considered in the same manner that alcohol is considered when evaluating the safety and well-being of a child.

**Justification**

Under the assumptions discussed, the goals of this research include securing a deeper understanding of how marijuana use impacts a caretaker's ability to provide for the safety and well-being of their children. Another goal of this evaluation is described by potential impact that marijuana legalization will have on the policies and procedures of child welfare agencies. An objective of this research would involve gaining insight into the relationship between caretaker's substance abuse and the likelihood of child maltreatment. The topic of child maltreatment and substance abuse remains significant to social work on two primary levels. First, research indicates that the past or current parental substance abuse is a risk factor for child maltreatment (Cohn & Daro, 1987; Dore, Doris, & Wright, 1995). Second, other research shows that unjust targeting of vulnerable populations continues to occur through racial profiling while socio-economic spotlights have led to displaced families. Parents who are arrested in sting operations or through random police stops have a high potential to leave children unattended in their wake. Being the sole federal government entity to serve and advocate for children's well-being, CPS should address caretaker's marijuana use in a uniform manner such as alcohol and other drugs.

Under the current NASW Code of Ethics (2008), social workers recognize the central importance of human relationships. Child welfare social workers understand the importance of family relationships and how they interact with the success of a child. The social work profession seeks to assist the entire family, not simply the child. Per NASW Code of Ethics (2008), social workers concurrently hold an obligation to strengthen

relationships among people in a purposeful effort to promote, restore, maintain, and enhance the well-being of individuals, families, social groups, organizations, and communities. The social work profession will likely remain a critical element of public policies known to affect the comprehensive well-being of children.

## Delimitations

This research project does not include qualitative data to further explore possible support or opposition to the legalization of marijuana. Information retrieved is limited to the information provided in the secondary data set and to the facts and figures of a specific sample population. The researchers will not be focusing on how the legalization or decriminalization of marijuana will impact society overall. Instead, the focus will be on how marijuana legalization will impact child welfare agencies and families. The restrictive requirements for participation in the longitudinal study could impact the overall findings. Furthermore, the authors of this study have chosen to only analyze children who were determined to be a moderate risk of child maltreatment between the ages 0 to 4 following a report to CPS. There may be a correlation to marijuana caretaker use and other societal problems but the authors will only be analyzing how it impacts the potential for child maltreatment.

## Summary

In Chapter 1, the topic of study is introduced in the introduction. This chapter includes a background of the problem, a statement of the problem, the purpose of this research and the theoretical framework. In addition, Chapter 1 contained conceptual and operational definitions of terms and a section that described limitations of the project.

Chapter 2 is a review of relevant literature with sections covering a description of the history of marijuana use, common factors associated with child maltreatment, negative outcomes associated with marijuana use, and caretaker marijuana use, its risk to children and association with child maltreatment. Chapter 3 is a description of the methodology. In Chapter 4, the data retrieved for this study is examined and analyzed. In Chapter 5, the summary of the findings is presented as well as recommendations and implications for future research and social work practice.

Chapter 2

**REVIEW OF THE LITERATURE**

Chapter 2 is a review of the literature pertaining to caretaker marijuana use and child maltreatment. The first section covers the history of marijuana use. The second section will focus on factors associated with child maltreatment. The third section will examine how marijuana affects cognitions, mental health, and behavior. The fourth section will discuss caretaker marijuana use, its risk to children and association with child maltreatment. The chapter will end with a discussion on gaps found in the literature and a summary.

**History of Mainstream Marijuana Use**

The use of the marijuana plant can be traced back thousands of years in almost every region in the world (Booth, 2003). The marijuana plant's history includes industrial, medical, and recreational applications. The main properties of the marijuana plant that account for its wide-ranging uses are the hemp fibers, tetrahydrocannabinol (THC), and Cannabidiol (CBD). The plant's hemp fibers can be used to make paper, cloth, soaps, and oils. The THC in the marijuana plant has psychoactive ingredients, which accounts for most recreational uses of the plant. The CBD properties of the marijuana plant are non-psychoactive and are thought to be useful in a wide range of medical applications. The plant's industrial, medical, and recreational applications have contributed to its varied level of acceptance within society (Booth). The following section will trace the history of marijuana use by discussing evidence and purpose of its use in different regions that can be found as far back as 10000 B.C.E. The section will also discuss how the public

opinion of marijuana changed throughout time and the social factors that contributed to such change.

**Marijuana in Ancient History**

The earliest use of the marijuana plant occurred in Taiwan where explorers found pieces of clay pottery decorated with hemp cords. The pottery was used by the Tapenkeng culture from 10000 to 3000 B.C.E. Hemp fibers, cloth, and rope were also discovered in many Neolithic Asian cultures. In China, hemp cloth found in the Yellow River Basin was dated to 5000 B.C.E. A hemp weaving site located in the Hebei province was used by the Shang Dynasty between 1700 and 1027 B.C.E. A Chinese treatise on agriculture, *Xia Zio Zheng,* written between 1600 and 1500 B.C.E. calls hemp the main crop. Writings from the Warring States period (475-221 B.C.E) refer to the marijuana plant as one of the common crops, and writings from 200-100 B.C.E. state that hemp cloth is most appropriate to wear when one is in mourning (Booth). The Chinese first discovered medicinal uses of marijuana in approximately 2700 B.C.E. Emperor Shen Neng prescribed a tea made from the marijuana plant for gout, malaria, rheumatism, and poor memory. The Chinese found that drinking the tea in large doses had psychoactive effects that they believed were magical and spiritual (Earleywine, 2002).

The marijuana plant and its various uses spread west from China. Historians believe that the Aryans, a nomadic tribe, brought the plant with them as they migrated to the West. By 1500 B.C.E, the marijuana plant was in Persia, Greece, the Balkans, Germany, and France. Marijuana began to appear in the seminal writings of the Hindu faith around 1100 B.C.E, where it was considered a magical plant used by priests and

holy men.  The sacred text, *Atharvaveda*, describes the marijuana plant as a sacred plant that can relieve stress.  Healers in India would also prescribe marijuana for congestion, cough, asthma, leprosy, and dandruff.  The Assyrian people who inhabited the Middle East in parts of modern-day Turkey, Iran, Iraq, and Syria around 900 B.C.E. used the marijuana for religious purposes (Booth).  The first evidenced recreational use of marijuana occurred between 600 and 100 B.C.E when Taoist became interested in the psychoactive effects as part of their pursuit of knowledge of alchemy and magic (Booth).

**Common Era Use of Hemp Fibers**

Hemp fibers were commonly used to create rope for use on ships, which popularized the plant throughout the world. (Earleywine).  Southern Russia began harvesting hemp to manufacture rope between 700 and 600 B.C.E. (Rubin, 1975).  An ancient Grecian tyrant, Hieron II, brought hemp fiber from France to make rope for his ships sometime around 200 B.C.E. (Stefanis, Ballas & Madianou, 1975).  By the end of the first century in the Common Era, hemp ropes were used in England and the Roman Empire.  The ropes were so vital to the success of ocean voyages that the demand for hemp fibers increased exponentially throughout the region (Booth).

There was such a high demand for hemp fiber to make rope, paper, and cloth that cultivation became mandatory in the English colonies around 1611.  Hemp became a form of currency after the Revolutionary War until national currency was established. The demand for hemp fibers continued in America throughout the westward expansion of the nineteenth century until cotton and wood became dominate in cloth and paper production, and steam ships replaced sailboats, thereby reducing the need for hemp ropes.

The necessity of hemp fibers and the demand for production declined, ending the world's need of marijuana for industrial use, but medical and recreational use continued (Booth).

**Common Era Medicinal Use of Marijuana**

A wide range of medicinal applications of marijuana was introduced in the early Common Era. In approximately A.D. 70, a Roman doctor published a medical book that claimed marijuana was useful in the treatment of earaches and suppression of sexual longing. About 100 years later, another Roman doctor published a medical book indicating that marijuana induced feelings of well-being, but led to intoxication, dehydration, and impotence when taken in excess (Booth). There is evidence that marijuana was used to ease pain during childbirth in Jerusalem sometime around A.D. 300 (Zias et al., 1993). Marijuana was used medicinally and recreationally in most of Africa and Europe by the end of the eleventh century. African countries used the drug to treat anthrax, dysentery, malaria, and asthma (Du Toit, 1975).

The first English reference to medicinal marijuana use appears in a medical book published in 1532, *Gargantua and Pantagruel.* The book claims that marijuana can be used to treat gout, horse colic, and burns. The *Edinburgh New Dispensary* (1801), a pharmacopeia, prescribed marijuana oil to treat various ailments including incontinence, cough, and venereal disease. The medicinal uses of marijuana never received scientific support, which led to few doctors prescribing the drug. In 1833 William O'Shaughnessy, an Irish physician, conducted the first studies on marijuana's effectiveness. O'Shaughnessy reported that marijuana helped to ease pain and discomfort associated with some conditions, but it did not cure the underlying disease (Earleywine). In 1860,

the *Report of the Committee on Cannabis Indica* published in *Transactions of the 15th Annual Meeting of the Ohio State Medical Society* concluded that marijuana is beneficial for treating pain, inflammation, and cough (Mikuriya, 1973). In 1890, Sir J. Russell Reynolds, chief physician to Queen Victoria, reported in an article published in *Lancet,* that marijuana was useful in the treatment of insomnia, facial tics, asthma, and menstrual problems (Reynolds, 1890).

Marijuana tinctures and extracts were widely available for medicinal use by the early 1900s. However, this more widespread use of marijuana generated concern about its psychoactive effects. The Marijuana Tax Act of 1937 imposed a prohibitive tax and restricted possession of marijuana to specific authorized medical and industrial applications, which led to a decrease in its use. In 1941, the U.S. Pharmacopoeia, a compendium of drug information, removed marijuana from its database. The medicinal use of marijuana declined for the next several decades. In the 1970s, researchers discovered that marijuana is useful in treating glaucoma. More recently, medical cannabis has been valuable in treating nausea and weight loss associated with Aids and chemotherapy treatment. However, the current legal status of marijuana makes it difficult for researchers to study its medicinal properties (Earleywine).

**Common Era Recreational Use of Marijuana**

A concentrated marijuana resin called hashish was commonly used recreationally in the Middle East around A.D. 1000. Historians believe that recreational marijuana use became prevalent because the holy text of the Islamic faith explicitly forbids alcohol consumption, but not marijuana. Arab traders brought marijuana to Africa. By the time,

Europeans started exploration of Africa (around 1400-1500), recreational and religious use of marijuana was customary amongst Africans (Booth). Over the next several hundred years, many European explorers, such as Marco Polo, returned to their homelands with hashish and folklore about its use. This lore spawned a reputation that marijuana caused aggression, boosted sexual appetite, and enhanced creativity. This reputation sparked fear in some and curiosity in others (Earleywine). Marijuana use became popular amongst artists and writers in France who sought to boost their creativity (Booth).

Early recreational use of marijuana is reported by American writer, Bayard Taylor. Taylor published two books about his experimentation with hashish. Both writings warned about the dangers of marijuana use and condemned all forms of intoxication (Taylor, 1854, 1855). In response to Taylor's work, Fitz Hugh Ludlow, an American writer, published a book in 1857 about his experimentation with marijuana. The book recounts Ludlow's experiences with hashish and lessons he learned with each experience. He contended that marijuana connected a person to his soul and senses. Ludlow urged society to be more accepting of narcotics (Ludlow, 1857).

The early writings on recreational marijuana consumption inspired some to use the drug recreationally, but opium, alcohol, and cocaine were more popular intoxicants within society. By the 1900s, most recreational marijuana users were not people who were a part of mainstream society (Earleywine, 2003). White American society condemned drugs because of their dislike of immigrants and minorities who commonly used them (Booth). There was an increase in recreational marijuana use with the

prohibition of alcohol in 1920, but when prohibition was repealed in 1933, the

government focused on abolishing marijuana use (Brecher & Consumers Union of United

States, 1973).

The chief of the U.S. Treasury Federal Bureau of Narcotics, Henry Anslinger,

focused federal funds on propaganda to disparage marijuana (Booth).  Anslinger

famously labeled marijuana as "the Devil's Weed."  Anslinger's campaign against

marijuana included stories about it inducing mayhem, sexual depravity, and serial

killings.  Media assisted in spreading this propaganda especially media conglomerate,

William Randolph Hearst.  Some researchers suggest that Hearst contributed to the

sensationalization of marijuana because of his conflicting financial interest (Lee, 2012).

The negative public opinion on marijuana helped to pass the Marijuana Tax Act of 1937.

The medical authority of the era rejected the idea that marijuana led to violence and

urged further research on its medicinal properties.  Anslinger responded with further

rhetoric and urged Congress to pass tougher laws on marijuana and other narcotics (Lee).

The Boggs Act of 1952 expanded the criminalization of marijuana by creating

mandatory minimum sentences for marijuana offenses.

Marijuana's popularity increased in the 1960s and negative public opinion waned

due to a lack of evidence supporting its connection to violence and mental illness

(Earleywine, 2002).  Its use flourished amongst minorities, artists, and intellectuals.  In

the 1960s, a group of young, white, intellectuals formed a group that became known as

the Beats.  The Beats changed the perception of marijuana use through their writings that

criticized American society and promoted personal freedoms.  The movement led to a

new generation of youth called the Beatniks who rebelled against the mores of society and promoted marijuana use (Booth). Celebrities like Bob Dylan and the Beatles publicized their marijuana use, which contributed to the wider social acceptance of the drug (Lee). In the 1970s, the public pushed for legalization, but the federal government was unresponsive to the demand (Earleywine). By 1975, marijuana was the most used recreational drug in the United States and its users expanded from those living on the margins of society to professionals, blue-collar workers, and veterans (Booth).

The presidential election of Ronald Reagan in 1980 facilitated another political push against marijuana use. Reagan declared a war on drugs in 1982, which did not distinguish marijuana from other narcotics. Nancy Reagan focused her attention on a campaign that urged kids to "say no to drugs," and declared there was no moral difference between marijuana and other drugs (Lee). In the 1980s, pro-marijuana advocates and legislation were at a standstill. Law enforcement recorded a record number of marijuana-related seizures and arrests. Jack Herer, a marijuana activist and advocate, was instrumental in renewing the campaign for the legalization of marijuana. Herer focused on the history of hemp fibers and medicinal use of marijuana using information written in official government documents. Herer was instrumental in a creating a resurgence of the use of hemp in the mainstream beauty and fashion industries, which ultimately set the stage for the revival of pro-marijuana legislation in the 1990s (Lee). In 1989, President George H. Bush ramped up the war on drugs and emphasized a crackdown on marijuana. On October 26, 1989, the DEA and local law enforcement carried out a coordinated raid in forty-nine states of hydroponic garden supply vendors

and retailers.  This seizure of marijuana equipment along with the growing number of arrests of disabled and chronically ill people for marijuana-related offenses began to change public opinion of marijuana once more.  Medical professionals, politicians, and media criticized the war on drugs for denying marijuana use for medical purposes and for spending an exorbitant amount of money on enforcing prohibition laws that did not result in decreased usage.  The prevailing public opinion in the early 1990s moved toward the support of medicinal marijuana use and research.  The start of the 1990s was also a critical time in the rise of hip-hop music, which promoted recreational marijuana use, and contributed to the cultural acceptance of marijuana in the Northwest region of the United States (Lee).  By the turn of the century, almost one-third of Americans admitted to trying marijuana at least once. (SAMHSA, 2000).

## Factors Influencing Child Maltreatment

To begin to understand if marijuana use is associated with child maltreatment, this review will look at risk factors that are commonly associated with abusive and neglectful parenting.  The risk factors that will be examined are within the domains of demographics, social dynamics, cognitive functioning, mental health, and substance use.

### Family Demographics and Social Dynamics

There is a lot of research focusing on family demographics and social dynamics that are associated with child maltreatment.  The commonly examined factors include maternal age, family composition, parental education, race/ethnicity, poverty, and parental education level.  Studies that examine sociodemographic factors as a potential risk factor for child maltreatment have produced mixed outcomes (Dubowitz, et al., 2011;

Palusci, 2011; Putnam-Hornstein & Needell, 2011; Rodriguez & Tucker, 2015; Slack et al., 2011; Thornberry et al., 2014). Most of the literature indicates that most sociodemographic factors are limited predictors of child maltreatment (Palusci,; Putnam-Hornstein & Needell, Rodriguez & Tucker; Thornberry et al.; 2014). However, research examining income, mother's level of education, and family size suggest that these factors are reliable predictors of child maltreatment (Dubowitz, et al.; Palusci, ; Slack et al.).

Income and financial resources are strong predictors of child maltreatment (Palusci; Slack et al.). In a cross-examination of three longitudinal studies of families, researchers found that CPS investigations of neglect are associated with economic stress as determined by indicators of financial assistance from family, use of food banks, and inability to pay utility bills. Economic factors were shown to be stronger indicators of child neglect than other social and cognitive factors examined in the same study (Slack et al.). The researchers notated that financial hardship is most likely a sign that a family is struggling in other domains, and those other domains may be the actual risk factor associated with child neglect (Slack et al.). Families with inadequate housing or that are receiving public assistance have a significantly increased risk of recurrent child maltreatment reports (Palusci). While poverty can be a risk factor for child maltreatment, it is important to note that most people living in poverty do not neglect or abuse their children. The explanation is likely because economic hardship causes undue stress on parents and limits access to resources necessary in child-rearing.

Studies linking birth records with substantiated cases of child maltreatment have revealed several sociodemographic factors present at birth that are thought to be

associated child maltreatment.  Recently, a cross-analysis of birth records from babies born in California in 2002 and CPS reports of child maltreatment found an association between twelve variables and maltreatment occurrences (Putnam-Hornstein & Needell). The twelve variables examined were sex of the child, birth weight, the start of prenatal care, birth abnormality, maternal birthplace, maternal race/ethnicity, maternal age, maternal education, abortion history, marital status, the number of children born to the mother, and whether the mother was a recipient of Medi-Cal.  The sex of the child is the only variable that did not reach statistical significance when analyzed.  Children with birth abnormalities and mothers who had previous abortions were by far the strongest indicators of child maltreatment.  Mothers younger than twenty-five years old and Medi-Cal recipients were also strong indicators of child maltreatment, as they represented one-half and two-thirds of all reports to CPS, respectively (Putnam-Hornstein & Needell).

Maternal education and mothers with several children are strong predictors of child maltreatment.  Putnam-Hornstein and Needell's (2011) found that most mothers with subsequent CPS reports had less than a 12th-grade education.  The same results were found in a study that followed low-income children from an urban pediatric clinic for ten years.  This study found that maternal education level and the number of children in the home were predictors of child maltreatment (Dubowitz, et al.).  Mothers with limited education may be missing the tools necessary to fulfill the responsibilities of raising a child.  Furthermore, raising multiple children increases the demands of child-rearing making it harder for parents to meet parental responsibilities across the domains of parenting.

Putnam-Hornstein and Needell (2011) found that Black and Native American children were reported to CPS at higher rates than White, Hispanic and Asian, but these numbers dropped dramatically when other variables were included in the analysis. Palusci (2011) found Hispanic and Whites were associated with recurrent child maltreatment reports, but not with initial reports. The variable of race/ethnicity did not reach statistical significance when the researchers controlled for other demographic variables. The variance in these studies suggests that, like income, race and ethnicity are not themselves the predictor of child maltreatment, but most likely the association between to a co-occurring extraneous factor.

In a longitudinal study that tracked 1,000 children from adolescence to adulthood, researchers could identify several social dynamic factors present in adolescence that increased the likelihood that the child would become a perpetrator of child maltreatment in adulthood. Negative life events experienced by the child's parents, low parental attachment, and children exposed to domestic violence were associated with subsequent maltreatment. Gang membership, juvenile delinquency, marijuana and alcohol use, and promiscuous sexual activity were also associated with subsequent maltreatment. The study did not find an association between the geographical location of the participants' childhood home and subsequent maltreatment (Thornberry et al.). For the most part, research suggests distress and social problems are predictors of child maltreatment. Evidence also suggests that this risk is significantly reduced when mothers have quality social supports available (Rodriguez & Tucker). Other research found that infants and young children reported to CPS commonly receive more services than older children, and

subsequently have fewer incidences of reoccurrence, suggesting that supportive services reduce the risk of child maltreatment (Palusci).

There are many common sociodemographic characteristics of families found in child maltreatment reports, such as lower economic status, minority ethnicity, and lower maternal education level.  The literature suggests that child maltreatment increases significantly when certain sociodemographic factors accumulate across all domains, which is logical given that sociodemographic factors are highly interconnected and occur simultaneously (Palusci).  Accordingly, child maltreatment occurs within a complex network of social influences and cultural forces so it is foreseeable predictors of such maltreatment come from multiple combined factors rather than individual factors.

**Cognitive Functioning, Mental Health, and Substance Use**

Research relating to the association between child maltreatment and cognitive functioning, mental health, and substance use is very comprehensive (Dubowitz, et al.; Hein, Cohen, Caldeira, Flom, & Wasserman, 2010; Kelley, Lawrence, Milletich, Hollis, & Henson, 2015; Lee, Taylor, & Bellamy, 2012; Rodriguez & Tucker; Slack et al; Stanton-Tindall, Sprang, Clark, Walker & Craig, 2013).  These variables have been shown to be reliable predictors of child maltreatment.  There is a consensus amongst the literature that these variables often co-occur, interact with one another, and collectively impact behavior.  However, the body of research examining these variables as they co-occur and interact with one another is less extensive (Dubowitz, et al.; Hein et al.; Stanton-Tindall, et al.).

Research indicates that maladaptive cognitive functions could increase the potential for child maltreatment (Rodriguez & Tucker; Slack et al.). Mothers who struggle with the emotions of empathy and compassion are more likely to perpetrate physical abuse of their children. Mothers who believe their children act out to annoy them intentionally are also more liable to commit physical abuse against their children (Rodriguez & Tucker. Slack et al. found that high levels of self-efficacy were consistently associated with lower occurrences of child maltreatment. Additionally, evidence indicates that a child's diminished cognitive ability may be a risk factor of child maltreatment (Dubowitz, et al).

Most research studying the association between child maltreatment and mental health involves depression (Dubowitz et al; Kelley, et al.; Lee, Taylor, & Bellamy). Depression can influence mood, behavior, and parent-child attachment. Evidence has shown that paternal depression can more than double the likelihood of child maltreatment. Maternal depression also significantly raised the likelihood of child maltreatment but not to such an extreme (Lee, Taylor, & Bellamy). Dubowitz et al. ) found that mothers with higher scores on The Brief Symptom Inventory (Derogatis & Spencer, 1982) had an increased likelihood of abuse reports. Also, one study found that maternal self-reports of depressive symptoms predicted a risk for child maltreatment and excessive discipline in homes where paternal substance use was present (Kelley, et al.).

Drugs are known to affect mood, enhance emotions, and inhibit judgment. Parents under the influence of substances may impulsively or uninhibitedly act violently toward children or neglect their needs. There is a lot of evidence supporting substance

use as a risk factor for child maltreatment (Dubowitz et al.; Stanton-Tindall, et al.). Dubowitz et al. found that mothers who reported drug use at any point in their lifetime were 1.7 times more likely to be reported to CPS than mothers that have never used drugs. One review of caregiver substance use research found 23 articles with findings that reported a strong correlation between substance use and CPS referrals or substantiated cases. The same review found associations between substance use and children exposed to violence (Stanton-Tindall, et al.). The research analyzed by Stanton-Tindall et al. found these associations even when other variables were controlled for, but noted there were very few studies that examined specific substance use. They further found that most studies consider substance use as an isolated factor, and do not take into consideration co-occurring conditions. Substance use commonly co-occurs with mental health disorder, poverty, and criminal activity (Stanton-Tindall, et al.).

There is very little literature exploring how substance use increases the potential for child maltreatment. It is theorized that cognitive functioning and emotional regulation may be the link, as substance use can impair a person's ability to regulate their emotional signals. Evidence has shown that emotional regulation is associated with distress, addiction, and aggressive behaviors (Hein, et al.). A growing body of research is finding associations between emotional regulations and negative parenting practices. One such study compared a group of women with depressive symptoms and a group of women with substance use disorders. The study revealed that there were no significant differences in child abuse potential between the two groups. The study further showed that anger arousal and reactivity were significantly associated with the potential for child

abuse across both groups. This study suggests that emotional regulation may be the interacting variable predicting child maltreatment for both mental health and substance use (Hein et al.).

Cognitive functioning, mental health and substance use all influence parenting practices. There is a vast amount of research indicating a correlation between these variables and behaviors that can harm a child or negatively impact development. Mental health and substance use often occur together, and both have an immense impact on cognitive functioning. This makes it difficult to conclude causation when examining the association between these variables and child maltreatment.

**The Effects of Marijuana Use**

To further understand if marijuana use is associated with child maltreatment, this review will look at how it affects cognitions, mental health, and behavior. A full understanding of outcomes related to marijuana use is still unknown. However, there is a body of recent research that suggests marijuana use has adverse effects on cognition, and physical health as well as increased symptoms of anxiety, depression, and suicidal ideation (Ansell, Laws, Roche & Sinha, 2015; Boden, Gross, Babson & Bonn-Miller, 2012; Bonn-Miller and Zvolensky 2009; Ellickson, Martino, & Collins, 2004; Fergusson & Horwood, 2013; Hart et al.,2010; Ostrowsky, 2011; Ramaekers, Kauert, Theunissen, Toennes & Moeller, 2009; Smith, Homish, Leonard & Collins, 2013; Thames, Arbid & Sayegh, 2014; Tull, McDermott, and Gratz, 2016; van Ours & Williams, 2011; van Ours & Williams, 2012; van Ours, Williams; Wilkinson, Halpern & Herring, 2016).

A longitudinal study that examined children from adolescence to adulthood found that marijuana use was associated with negative outcomes in behavior, socioeconomic, and health domains (Ellickson, Martino, & Collins, 2004).  These findings indicate that the relationship is somewhat complex because it varies with the trajectory of marijuana use.  The study divided participants into five groups based on their level of marijuana use from adolescence to adulthood.  The first group included "abstainers' who did not engage in marijuana use.  The second group was "early high users" who had a high level of use in adolescence but decreased to a moderate amount of use through adulthood.  The third group was "stable light" users who engaged in a low level of use from adolescence through adulthood.  The fourth group was "occasional light users" who also engaged in a low degree of use but did not participate in use until late adolescence.  The fifth group was "steady increasers" who did not participate in marijuana use until late in adolescence but engaged in heavy usage in adulthood.  The results showed that the abstinence group had higher levels of educational attainment, overall health, and life satisfaction than all other groups.  The abstinence group showed better mental health outcomes when compared to the light user group and the steady increaser group.  However, there were no differences in mental health between the abstinence group, the early high group, and the stable light user group.  In fact, the early high group tended to have more favorable outcomes than the other trajectory groups (Ellickson, Martino, & Collins).  These findings indicate that the pattern of marijuana use may mediate negative outcomes.

**Psychological Outcomes**

 van Ours and Williams (2011) examined data from Australia to establish an association between marijuana use and mental illness.  The researchers found that frequent use of marijuana increased the likelihood of mental illness.  The probability of experiencing mental illness jumped from 0.9% for men who never used marijuana, to 1.5% for men who use marijuana monthly, to 2.4% for men who use marijuana weekly or more often. van Ours and Williams (2012) conducted a similar subsequent study using data from Amsterdam and found that marijuana use was associated with a lower level of mental well-being in both men and women.  However, the association was weak, and a similar effect size was found amongst single participates in a study comparing the mental well-being of subjects who were not in a romantic relationship and those that were.

A recent study found that marijuana use was associated with a subsequent increase of depressive symptoms and those depressive symptoms were related to subsequent increases in the frequency of marijuana use.  The results of this study indicate that the association between marijuana consumption and depression is bidirectional (Wilkinson, Halpern & Herring).  Of males who are susceptible to suicidal ideation, marijuana use accelerates the onset of such thoughts.  Specifically, the younger a participant is at first use combined with frequent use is associated with an earlier onset of suicidal ideation in susceptible males.  This association was not bidirectional, and the same results were not found with female participants.  Furthermore, the researchers noted that marijuana use does not have any impact on the probability of one being susceptible to suicidal ideations, and everyone who is susceptible to suicidal ideation is likely to have

suicidal thoughts regardless of marijuana use (van Ours, et al.).

The research linking marijuana use to panic attacks has produced mixed results that appear to depend on the pattern of use.  Bonn-Miller and Zvolensky (2009) found that adults that met the criteria for marijuana dependence, as outlined in DSM-IV, had more self-reports of panic attacks symptoms than adults that met the criteria for marijuana abuse but not for those who met the criteria for marijuana use.  These results indicate that frequency of use may play a substantial role in how marijuana affects mental health, whereby high and low frequency of use is associated with adverse outcomes, while moderate use is unaffected.

The growing body of evidence on the association between marijuana and mental health indicates that marijuana has some impact on psychological outcomes, which is influenced by the regularity of consumption (Bonn-Miller and Zvolensky).  The current body of evidence lacks a determination of directionality of significant findings.  It is necessary to determine directionality to rule out the possibility that any association is due to self-medicating behaviors, which are commonly associated with mental health disorders.

**Cognitive Outcomes**

It is a common, longstanding belief amongst lay people that marijuana affects memory.  Research related to cognitive impairments and marijuana find that marijuana consumption does have unfavorable outcomes on cognitions, particularly memory.  However, the body of literature that considers the pattern of consumption when examining marijuana's impact on cognition generates results that is somewhat convoluted

(Hart et al.; Ramaekers, et al.; Thames, Arbid & Sayegh, 2014).

There is some evidence that suggests marijuana impairs cognitive functioning in occasional users but not in heavy users, which may be due to an acquired tolerance in heavy users (Ramaekers, et al.).  Another study found a positive correlation between adverse cognitive outcomes and the frequency of marijuana use (Thames, Arbid & Sayegh).  Hart et al. (2010) attempted to prove that the inconsistent results of research on marijuana and cognitive functioning might be due to the type of memory tasks used in previous studies.  The researchers designed a study that used a variation of memory tasks to analyze the cognitive functioning of frequent and occasional marijuana users.  The researchers' results showed minimal differences in episodic and spatial working memory between frequent marijuana users and occasional marijuana users.  The frequent marijuana users had slightly longer execution times and more response bias relating to previously unseen words than occasional users.  A study that compared current marijuana users with past users found that current users had less favorable outcomes in attention memory, working memory, information processing speed, and executive functioning.  However, there were no significant differences between past marijuana users and non-users except with executive functioning.  This study also found a negative correlation between frequency of use and cognitive functioning (Thames, Arbid & Sayegh).

Research relating to marijuana's effect on emotions indicates that marijuana use has some impact on emotional regulations (Boden, et al., 2012).  One study found that the low levels of emotional clarity (ability to identify and understand an emotional source) and high levels of cognitive reappraisal (misinterpretation of specific situations that

impact emotions) can predict problematic marijuana use. Prior studies failed to find a connection between cognitive appraisal and substance use indicating that the effect may only occur with individuals that also have low emotional clarity (Boden, et al.). The researchers also suggest cognitive reappraisal acts to minimize emotions that serve to inhibit behavior that could cause harm, such as marijuana consumption (Boden, et al.).

Individuals with Posttraumatic Stress Disorder (PTSD) present with symptoms related to emotional regulation (Tull, McDermott & Gratz, 2016). One such symptom is emotional reactivity in response to trauma cues. Recent research reveals that marijuana use may diminish emotional reactivity in people with PTSD (Tull, McDermott & Gratz). Tull, McDermott, and Gratz ) found emotional reactivity was less common in individuals with PTSD who used marijuana than nonusers. The results also found that marijuana users without PTSD reported less emotional reactivity than nonusers. This research study indicates that marijuana does not impact emotional regulation related to fear processing.

**Aggression**

Many studies have sought to find and explain an association between marijuana use and aggression (Ostrowsky, 2011). The interaction between marijuana use and specific cognitive functioning, such as inhibition, panic symptoms, and the ability to process complex information, may lead to increased aggression. Conversely, the interaction between marijuana use with cognitive functioning, such as mood, affect, and tolerance for others may reduce the likelihood of aggression (Ostrowsky).

One study found that marijuana withdrawal was associated with relationship aggression but not general aggression in users who had a previous history of aggression

(Smith, et al., 2013). Researchers did not find an association between marijuana withdrawal and aggression amongst individuals without a history of aggression (Smith, et al.). Another study found that marijuana increased impulsivity, hostile behavior, and the perception of hostility in others on both the day of and day after use, but did not find any related association when factoring in the frequency of consumption (Ansell, et al.).

The literature examining marijuana use and adverse outcomes on cognition, mental health and behavior have produced mixed results (Ansell, et al.; Boden, et al; Bonn-Miller and Zvolensky 2009; Ellickson, Martino, & Collins, 2004; Fergusson & Horwood, 2013; Hart et al.; Ostrowsky, 2011; Ramaekers, et al; Smith, et al.; Thames, Arbid & Sayegh, 2014; Tull, McDermott & Gratz; van Ours and Williams, 2011; van Ours & Williams, 2012; van Ours, et al, 2016). Research indicates that marijuana use does negatively impact health outcomes and socioeconomic outcomes, depression, anxiety, and cognitive functioning. The research indicates that some of the significant outcomes found relating to cognitive functioning are minimal, positive such as with people who have PTSD, and are highly dependable on the pattern of use.

### Caretaker Marijuana use and Child Maltreatment

There is limited research examining the relationship between caretaker marijuana use and child maltreatment. Most research examining general substance abuse, or other specific substances, with child maltreatment indicate an association between the two (Kelley, et al., 2015). However, it would be inappropriate to generalize these findings to marijuana use because it manifests in a vastly different manner than other drugs, especially related to the physical and psychological effects from use and dependence of

the drug. Given the limited empirical evidence concerning caretaker marijuana use and child maltreatment, this section will review empirical studies and other applicable literature to get a better understanding of the impact that a caretaker's marijuana use has on child maltreatment. First, we will examine literature related to pediatric marijuana exposure and the associated medical risks. Second, we will consider applicable California laws that apply to substance abuse related child maltreatment. Finally, we will review a recent empirical study that examined the association between marijuana use and child maltreatment.

**Child Exposure to Marijuana**

A common child welfare concern of caretaker marijuana use relates to the accidental or intentional child exposure to marijuana. Children exposed to marijuana occurs through unintended ingestion, which can lead to medical emergencies such as ataxia, seizure, coma or respiratory depression (Onders, Casavant, Spiller, Chounthirath & Smith, 2016). The literature examining child exposure to marijuana indicates that children with caretakers that consume marijuana are at a greater risk for ingestion, and ingestion can lead to severe medical issues (Onders, et al.).

A recent study looked at national poison control data from 2000 to 2013 and found 1,939 occurrences marijuana exposure for children under six years old (Onders, et al.). Much of these exposures were unintentional (92%) and occurred in the child's residence (83%). The most common exposure incident found in the study resulted from ingestion. The study found that approximately seven percent of exposures led to critical care treatment, and one percent of exposures incidents resulted in long-term, major

medical issues.  The most common medical outcome was drowsiness or lethargy (29.5%).  The study noted that marijuana exposures are rare in children under six years old, but increasing (Onders, et al.).

Wang, Narang, Wells, and Chuang (2011) examined the health records of children under five years of age in Colorado from October 2009 to March 2010 to study instances of marijuana exposure.  There were five children identified who were treated for marijuana exposure in local emergency room clinics.  The study noted that there had been no nationally reported deaths from marijuana exposure, but there have been serious injuries, such as coma.  The researchers assert anytime a child is exposed to marijuana the child's health is put at risk and it should be considered child maltreatment.  In a follow-up study, Wang, Roosevelt, and Heard (2013) examined hospital records at a Colorado Children's Hospital from January 2005 through December 2011.  They found that the number of patients evaluated for marijuana ingestion were still relatively small but increasing since a change in law occurred that decriminalized marijuana.  The researchers theorized that this increase in child marijuana ingestion was attributable to the change in the law.

**Applicable Laws**

A review of the applicable laws in California relating to substance use and child maltreatment indicate that a caretaker's marijuana use can constitute child maltreatment under certain conditions, but that a caretaker's use of marijuana itself does not meet the criteria for child maltreatment (California Family Code §§ 3011-3021; California Penal Code §§ 270-273; California Welfare and Institutions Code § 300).  Three different

California codes books contain laws relating to child maltreatment. These code books are the California Penal Code, Welfare and Institutions Code and Family Law code. These three codes specify what constitutes child maltreatment criminally, what constitutes child maltreatment that would necessitate removing the child from the family and placing them in protective custody, and maltreatment that would affect custodial matters in family law. However, none of these codes have provisions that specify marijuana, which leaves the laws open to interpretation of local law enforcement, courts, and child welfare agencies.

The California Penal Code Section 270 and 273(a) provide the guidelines for criminal offenses of child maltreatment. It specifies a criminal offense occurs when "a parent of a minor child willfully omits, … to furnish necessary clothing, food, shelter or medical attendance, or other remedial care for his or her child" (California Penal Code §§ 270, p. 435). California Penal Code Section 273 (a) states a criminal maltreatment offense occurs under the following conditions:

> Any person who, under circumstances or conditions likely to produce
> great bodily harm or death, willfully causes or permits any child to suffer,
> or inflicts thereon unjustifiable physical pain or mental suffering, or
> having the care or custody of any child, willfully causes or permits the
> person or health of that child to be injured, or willfully causes or permits
> that child to be placed in a situation where his or her person or health is
> endangered (California Penal Code §§ 273, p. 437).

Child maltreatment that rises to the criminal level is characteristic of "willful." Due to the "willful" requirement of this code, a caretaker's marijuana use in unlikely to lead to

criminal prosecution under California law unless the caretaker intentionally exposes the child marijuana (California Penal Code §§ 270-273).

California Welfare and Institutions Code Section 300 specifies the circumstances that a child may be adjudged a dependent child of the juvenile court. The code describes dependency occurs when "The child has suffered, or there is a substantial risk that the child will suffer, serious physical harm inflicted nonaccidental upon the child by the child's parent or guardian" (California Welfare and Institutions Code § 300, p. 786). The code additional includes the following as conditions, which dependency may occur:

The child has suffered, or there is a substantial risk that the child will

suffer, serious physical harm or illness, as a result of the failure or

inability of his or her parent or guardian to adequately supervise or protect

the child, or the willful or negligent failure of the child's parent or

guardian to adequately supervise or protect the child from the conduct of

the custodian with whom the child has been left, or by the willful or

negligent failure of the parent or guardian to provide the child with

adequate food, clothing, shelter, or medical treatment, or by the inability

of the parent or guardian to provide regular care for the child due to the

parent's or guardian's mental illness, developmental disability, or

substance abuse (California Welfare and Institutions Code § 300, p. 786).

This code mentions substance abuse but only as it relates to the negligence of parenting responsibilities. The research reviewed indicates that accidental ingestion is a risk for children whose caretaker uses marijuana (California Welfare and Institutions

Code § 300). A caretaker's marijuana use could lead to allegations of child maltreatment under the Welfare and Institutions Code because of the substantial risk of harm from ingestion, or neglect of parenting responsibilities while under the influence (California Welfare and Institutions Code § 300).

The California Family Code Section 3020 states the guidelines that the court must follow when making custodial determinations in family court. The code declares that "the health, safety, and welfare of children shall be the court's primary concern in determining the best interest of children when making any orders regarding the physical or legal custody or visitation of children (California Family Code § 3020, p. 1128). Family Code Section 3011 further explains this code by including specific factors that may be considered:

> In deciding of the best interest of the child…, the court shall, among any
> other factors it finds relevant, consider all the following: the health, safety,
> and welfare of the child; the habitual or continual illegal use of controlled
> substances, the habitual or continual abuse of alcohol, or the habitual or
> continual abuse of prescribed controlled substances by either parent….
> (California Family Code § 3011, p. 1121).

This code is the most applicable to caretaker marijuana use as it clearly states that caretaker marijuana use can be taken into consideration when determining custodial manner. However, the if the caretaker was using marijuana purposes for medicinal purposes, which is legal in California, then their marijuana use could only be considered if it met the standards for "abuse," which would be defined by the Court.

**Caretaker Marijuana Use and Child Maltreatment`**

There is limited relevant research examining the relationship between marijuana use and child maltreatment. The most relevant study, examined the relationship between marijuana use, physical availability of marijuana, and child maltreatment, specifically physical abuse, supervisory neglect and physical neglect (Freisthler, Gruenewald & Wolf, 2015). This study examined data collected by telephone survey from 3,000 parents throughout 50 moderately sized cities in California. Information that was collected via survey included questions regarding abuse, neglect, current marijuana use, past marijuana use, and various psychosocial factors. The researchers also measured the physical availability of marijuana in each city by the number of marijuana dispensaries. The study found that current marijuana use (within the past year) was not associated with supervisory or physical neglect, but it was associated with physical abuse. Also, cities having a greater density of dispensaries, thus greater availability of marijuana, were associated with more physical abuse (Freisthler, Gruenewald & Wolf). The results of this study conflicted with the researcher's hypothesis, as they believed that caretaker marijuana use would be associated with neglect but not abuse. This suggests that caretakers who have a predisposition to aggression and abuse may be more prone to use marijuana. The results of this study also conflict with prior research that supports the theory that the biggest risk to children of parents who use marijuana is neglect.

**Gaps in the Literature**

While reviewing the literature, there appears to be a focus on both predictors of child maltreatment and negative outcomes associated with marijuana use (Ansell, et al.,

2015; Boden, et al., 2012; Bonn-Miller and Zvolensky 2009; Dubowitz, et al., 2011; Ellickson, Martino, & Collins, 2004; Fergusson & Horwood, 2013; Hart et al.; Hein, et al.; Kelley, et al; Lee, Taylor, & Bellamy; Ostrowsky, 2011; Palusci, 2011; Putnam-Hornstein & Needell; Ramaekers, et al., 2009; Rodriguez & Tucker, 2015; Slack et al.; Smith, Homish, Leonard & Collins, 2013; Stanton-Tindall, et al.; Thames, Arbid & Sayegh, 2014;Thornberry et al.; Tull, McDermott, & Gratz, 2016; van Ours & Williams, 2011; van Ours & Williams, 2012; van Ours, et al).  The researchers were only able to find one empirical study that looks at the association between child maltreatment and marijuana use (Freisthler, Gruenewald & Wolf).

There are some common issues that were found throughout the collection of research reviewed.  First, the empirical studies have a variety of theoretical and operational definitions relating to marijuana use.  There is no consensus on what constitutes moderate, mild, or severe use of marijuana (Bonn-Miller and Zvolensky, 2009; Ellickson, Martino, & Collins, 2004; Hart et al.; Ramaekers, et al; Thames, Arbid & Sayegh, 2014; Wilkinson, Halpern & Herring).  Second, most of the data obtained in the reviewed empirical studies were dependent on participant's self-reports, and the accuracy of such reports cannot be verified (Boden, et al.; Bonn-Miller and Zvolensky; Dubowitz, et al.; Ellickson, Martino, & Collins; Fergusson & Horwood, 2013; Freisthler, Gruenewald & Wolf; Hein, et al.; Kelley, et al.; Ostrowsky, 2011; Palusci; Ramaekers, et al.; Rodriguez & Tucker; Slack et al.; Smith, Homish, Leonard & Collins, 2013; Thames, Arbid & Sayegh; Thornberry et al.; Tull, McDermott, and Gratz; van Ours and Williams, 2011; van Ours and Williams, 2012; van Ours, et al.).  Third, most of the reviewed

studies controlled for sociodemographic variables but, failed to fully consider the possibility of interactions with co-occurring variables, especially as they relate to mental health or other substance use (Dubowitz, et al.; Hein et al.; Palusci, 2011; Putnam-Hornstein & Needell; Stanton-Tindall, et al.). Fourth, the reviewed literature lacked evidence supporting directionality of the findings on the harms of marijuana use (van Ours, et al., 2013; Wilkinson, Halpern & Herring).

The body of research that examines factors associated with child maltreatment is extensive. There is a lot of evidence that cognition, mental health, and substance abuse are indicators of child maltreatment (Dubowitz, et al.; Hein, et al.; Kelley, et al.; Lee, Taylor, & Bellamy; Rodriguez & Tucker; Slack et al.; Stanton-Tindall, et al.,). The evidence available does not sufficiently account for interactions, co-occurrence, or directionality, and more research is needed in this area (Dubowitz, et al.; Hein, et al.; Kelley, et al.; Lee, Taylor, & Bellamy; Rodriguez & Tucker; Slack et al.; Stanton-Tindall, et al.).

The body of research that examines the negative outcomes associated with marijuana use rejects the common theory that marijuana is a harmless drug (Ansell, et al.; Boden, et al.; Bonn-Miller and Zvolensky; Ellickson, Martino, & Collins; Fergusson & Horwood; Hart et al.; Ostrowsky,; Ramaekers, et al.; Smith, et al.; Thames, Arbid & Sayegh,; Tull, McDermott, and Gratz; van Ours and Williams, 2011; van Ours and Williams, 2012; van Ours, et al.). The most notable findings of this literature indicate that frequency of consumption can influence negative outcomes (Ansell, et al.; Bonn-Miller and Zvolensky; Thames, Arbid & Sayegh; Wilkinson, Halpern & Herring). The

research available varies immensely on defining and measuring the frequency of marijuana use (Ansell, et al.; Bonn-Miller and Zvolensky; Thames, Arbid & Sayegh,; Wilkinson, Halpern & Herring). Future research needs to include a more standard method of measurement to ensure that results can be generalized to the larger population. There are issues with comparing results of studies when measurements of marijuana consumption differ between studies. This leaves the possibility that one study would define frequency data as high while another study defines the same data as low frequency. There is also a need for further research that examines the directionality of correlations that have been found in the current body of evidence. It may be that certain characteristics, such as aggression or depression increase the likelihood that an individual will use marijuana. This is especially key when considering that people with mental illness frequently use drugs and alcohol to self-medicate.

The research examining the relationship between caretaker marijuana use and child maltreatment is minimal. Only one relevant study could be located, and some important limitations were noted (Freisthler, Gruenewald & Wolf). Most notable was the response rate of the survey and number of participants who reported any marijuana use was rather low. There were also some issues with social desirability bias as the surveys were conducted by telephone and likely limited the participant's willingness to report abusive behaviors or marijuana use (Freisthler, Gruenewald & Wolf).

This study will attempt to expand the research on child maltreatment and caretaker marijuana use and address the gaps noted above. It will examine data in the National Data Archive on Child Abuse and Neglect, which will minimize any issues with

response rate and social desirability bias. Trying to construct a research design that can account for co-occurrence and directionality is difficult given the scope of the data available. The data used in this study was collected as part of a longitudinal study that had several collection points over a 14-year period, which allows for some secondary analysis of the directionality if significant results are found. The data available in the National Data Archive on Child Abuse and Neglect is extensive, and enough information is available to examine compounding and co-occurring variables if significant results are found. However, such analysis is dependent on the findings of the current study and may be better suited for a follow-up study rather than to incorporate it as a secondary analysis within the current study.

**Summary**

Chapter two is an appraisal of literature that is relevant to caretaker marijuana use and child maltreatment. Throughout the investigation, assertions that marijuana consumption is associated with adverse outcomes across all domains were substantiated, but many of the outcomes were influenced by the pattern of use. The literature also suggests that mental illness, substance abuse, and maladaptive cognitions are indicators of child maltreatment. However, these factors are interrelated and co-occur. There was not sufficient evidence examining the interaction between the variables and how that interaction impacts research findings. The literature review did not find much research examining an association between marijuana use and child maltreatment. The empirical study reviewed found that caretaker marijuana use was associated with physical abuse and neglect. These results conflicted with the researchers' hypothesis and prior evidence,

which suggests that further research is necessary.  The current applicable laws do not

incorporate caretaker marijuana use as a reason for removal, criminal proceedings, or loss

of custody, but it is a factor that must be evaluated in context with other circumstances.

The initial research from the medical perspective indicates that accidental marijuana

ingestion is the primary risk to children with caretakers who use marijuana.  In the

following chapter, the researchers will detail the methodology of the current study.

Chapter 3

**METHODOLOGY**

In this chapter, the methodology utilized in the study is described. It contains sections on the research question, research design, the variables, study and sample population, the instrumentation, the procedures employed for data gathering and data analyzing. The chapter concludes with a section describing the safety measures involved in the protection of its human subjects.

**Research Question**

The researchers hypothesize there will be no positive correlation between parent/caretaker's marijuana use and substantiated maltreatment cases. This study will investigate the following research question: how the use of marijuana by a parent/caretaker affect the likelihood of substantiated child maltreatment events.

**Research Design**

The design used in this study was an exploratory quantitative secondary data analysis research approach. In general, exploratory research designs are simpler than other research designs and are likely to use existing documents or data sets. Exploratory studies examine specific areas with the purpose of making recommendations or providing evidence for policy making or program implementation. Also, exploratory studies usually are conducted when there are few earlier studies to rely upon to predict an outcome (Babbie, 2010). Due to the use of a secondary data set and minimal previous research specific to caretaker's marijuana use and substantiated maltreatment events, an exploratory design seemed to be appropriate for this research study.

Quantitative research designs are a method of obtaining objective measurements and conduct statistical analysis of collected data. The goal of quantitative research is to find common themes in the data or a relationship between the variables that can be generalized across groups of people to explain a phenomenon, predict future outcomes, and investigate causal relationships. Quantitative data is more efficient in its ability to test hypotheses but it can miss contextual details, and the results cannot explain details of attitudes or motivations. Furthermore, quantitative studies can usually be replicated, which is important when determining the reliability of any given study (Babbie).

This secondary data set was obtained from the National Data Archive on Child Abuse and Neglect (NDACAN) through a secure web portal at https://cornell.box.com/s/59p7tehxqvsg9x8j9jwf4v917r6mn6yk. The researchers used the data from the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN) to analyze the relationship between caretaker's marijuana use and substantiated child maltreatment. LONGSCAN is a consortium of research studies at five data collection sites operating under common by-laws and procedures. Each collection site conducted the studies separately that could stand alone, but the use of standardized assessment measures and methodology allows for the data to be pooled together making the overall study results considered more comprehensive than if only one site was in the analysis. The investigators from LONGSCAN followed participating children and their families from birth to 18 years old and collected data on many critical issues relating to child development and the family. They also reviewed data from Child Protective Services (CPS) every two years to obtain and verify child maltreatment information. The data

design employed in the LONGSCAN allowed for a comprehensive exploration of many factors concerning child abuse and neglect. There was also sufficient statistical power in the combined sample size from the multiple sites rather than just one site; and its findings could be replicated across any ethnic, social, or economic group.

The use of secondary data as part of the research design has some weaknesses. The use of secondary data set may compromise the study's validity. The researchers addressed the issue of validity by conducting a review of the measures and measure manuals included with the LONGSCAN data set to ensure that researchers use of variables contained in the data set to align with the description, purpose and conceptual organization of the measures used in the original study. The second weakness in using a secondary data set design is that the researchers do not have control over the quality of the data. The researchers addressed this issue by examined the qualifications of the investigators of the original study and their agency affiliations. The data set was obtained from NDACAN, a federally funded agency that collects data and promotes research on child maltreatment. The NDACAN mission statement includes a guarantee that datasets contain high-quality data. NDACAN receives funding from the U.S. Department of Health and Human Services, Children's Bureau and the data gathered through NDACAN is reflected in federal statistical reports and federal policies.

The strengths of a using secondary data as part of the research design is that it provides data that the researchers would not otherwise be able to collect due to funding and confidentiality barriers. The second strength of using a secondary data analysis is that improves the overall understanding of child maltreatment because of the ability to

make a comparison to the analyses that were conducted as part of the original study or by other research studies that have used the same dataset.

## Variables

The variables that the investigators utilized in the study are related to marijuana use, substantiated child maltreatment events, and demographic information. The variables that are used in the current study are part of the LONGSCAN Dataset, a secondary data set from the NDACAN. The independent variable is parent/caretaker marijuana use. Current marijuana use was determined by asking the respondents do you smoke marijuana (grass, weed, pot, or hash). Past marijuana use was determined by asking the respondents have you ever smoked marijuana. Both questions utilized a nominal scale with the answers yes or no. Current frequency of marijuana use was determined by asking the respondents how often they smoke. Past frequency of marijuana use was determined by asking respondents what was the most often they have ever smoked. The questionnaire provided respondents with an ordinal scale to choose their answer. The scale included one to two times per month or less, three to five times per month, more than five times per month, daily, don't know or refuse.

The dependent variable is substantiated child maltreatment events. Child maltreatment data was collected from child welfare databases for each participant. Substantiations are recorded pursuant to the policies and procedures of each reporting child welfare agency and include the confirmation of an allegation of abuse and neglect post investigation. The child welfare reporting database uses a ratio scale to identify substantiated child maltreatment events.

**Study Population**

The current study utilized secondary data from LONGSCAN collected by the researchers at NDACAN. In the original study, the study population was a cohort of 1,354 children at five different sites in the United States. The study sites were in the East, Midwest, South, Southwest and Northwest regions of the country. The LONGSCAN study identified a sample of children in the first years of life as being at risk for maltreatment. Each study site recruited participants with different selection criteria to obtain a sample of children that included low-risk, moderate-risk, and high-risk for maltreatment. This sampling method was done to ensure the sample was representative of all children that are at-risk for child maltreatment. Risk level was determined by the presence of various risk factors or identifiers that are commonly associated with maltreatment such as the family's income level and ethnicity.

The study followed the children and their families until they reached adulthood. The children were identified at various ages, but the first interview following enrollment occurred within three months before or after the child's 4th birthday. The cohort was evaluated again at ages 6, 8,12,14,16 and 18 years old. The investigators also conducted yearly phone calls to track families and assess their utilization of supportive services and reviewed Child Protective Services narratives, and central registry records every two years.

**Sample Population**

The current study will evaluate the entire LONGSCAN cohort of 1,354 children across all five collection sites. The individual collection sites were selected to be

representative of every region in the country.  Each site recruited a cohort of children based on different criteria which represented the varying levels of risk and exposure to maltreatment.

The Eastern site cohort includes 237 children that were part of a pre-existing study recruited from pediatric clinics that served low-income, inner city children in Baltimore, Maryland.  The children selected were those deemed to be at risk for child maltreatment based on combined health characteristics of the parent and child.  The criteria to be selected included children who had inadequate growth in the first two years of life and children that had a parent with either an HIV infection and/or reported drug use.  The selected children began participation in the LONGSCAN study when they turned four years old.  The Eastern cohort of participants consists majorly of low-income, unmarried, African American mother's (Table 3:1).

The Midwest site recruited 245 children from families reported to CPS in the city of Chicago, Illinois. The study sample started with 320 families that were below the federal poverty threshold.  The selection criteria included families with at least one report of substantiated abuse or neglect within twelve months of recruitment.  Half of the selected children received comprehensive services and the other half only received court intervention.  The Midwest cohort consists of a diverse mix of ethnicities but the majority are African American (Table 3:1).

The Southern site recruited 254 children from a population of 788 newborns identified as high risk at birth by a state public tracking system.  The mothers of the newborns were recruited from hospitals and health departments across the state of North

Carolina.  This cohort was not selected for abuse or neglect, but for reasons of poverty,

single parenthood, young maternal age, low birth weight, and other medical and

psychosocial risk facts.  The mothers were first interviewed seven weeks after giving

birth to the participating children.  The selected participants joined the study when the

children turned three years of age.  Of the 788 subjects originally identified, 254 were

eligible for inclusion in the LONGSCAN study.  Subjects were excluded if they were

deceased, were not African-American or Caucasian, or if they had been reported to child

protection services for maltreatment.  The Southern site cohort consists of 63% African

American participants and 35% Caucasian participants (Table 3:1).

The Southwest site recruited a cohort of 330 children out of a population of 5,331

children that had entered a county dependency system due to confirmed maltreatment

within a one year period in San Diego, California.  The selection criteria included

children that were placed in out-of-home placement with a relative or foster family

placement prior to age three and a half, which narrowed the sample to 532.  The study

successfully recruited 330 of the children that met the selection criteria.   As seen in

Table One, African-American children comprise the largest ethnicity group (37%) in the

Southwest cohort, and the socioeconomic status of these families is higher than that of

other sites.

The Northwest site recruited a cohort of children, aged 0 to 4, referred to CPS

with an allegation of maltreatment and assessed as moderately likely to be re-referred to

child protective services absent intervention. The assessment of likely future

maltreatment is based on guidelines developed in the Washington Risk Assessment

Model (WRM). The WRM includes screening criteria, guidelines for assigning risk at intake (for response prioritization), and a 32- item ecological risk model for assessing risk after investigation (Hunter, et al., 2003). There were over 1,000 subjects identified and sent introductory letters describing the study and inviting families to participate. There was a final recruitment of 254 families into the Northwest site. The primary caretakers served as the principal respondents in the study. In the Northwest cohort, primary caregivers consisted mostly of biological mothers (73%). The northwest cohort was comprised of 21% black children, 51% white children, 24% mixed race, and 4% Hispanic, Asian or other.

A non-probability sampling method was utilized to obtain the sample population. The sampling method relied on caseworker referral or identification by a LONGSCAN staff through examination of case files or government databases. The LONGSCAN investigators chose this sampling method to ensure that the children had the stated level of maltreatment risk for each collection site, and were age 0 to 4. The non-probability sampling method allowed for the investigators to select a large pool of children who met the criteria of age and risk for maltreatment. The selection criteria ensured that participants had a moderate level of risk for maltreatment, which enabled the LONGSCAN investigators to identify antecedents and consequences to child maltreatment. The disadvantage of using non-probability sampling method is that it limits the generalizability of the study. However, the LONGSCAN study sample was not intended to be representative of the general population. The other disadvantage of using non-probability method is that it allows for selection bias.

        The LONGSCAN investigators chose this sampling method to ensure that the

children in the Northwest cohort had a moderate risk of maltreatment and were age 0 to

4.  The non-probability sampling method allowed for the investigators to select a large

pool of children who met the criteria of age and risk for maltreatment.  The selection

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limits the generalizability of the study.  However, the LONGSCAN study sample was not

intended to be representative of the general population.  The other disadvantage of using

non-probability method is that it allows for selection bias.

Table 3.1 Sample Population

| | Baseline (1,354) | EA (237) | MW (245) | NW (254) | SO (243) | SW (330) |
|---|---|---|---|---|---|---|
| CHARACTERISTIC | % | % | % | % | % | % |
| *Child's Race* | | | | | | |
| Caucasian | 354 | 5.0 | 13.1 | 50.0 | 35.8 | 28.5 |
| African American | 721 | 92.9 | 53.5 | 20.5 | 63.0 | 37.6 |
| Hispanic | 97 | 0.4 | 13.9 | 2.8 | 0.0 | 16.7 |
| Mixed | 161 | 1.1 | 17.1 | 24.0 | 1.2 | 15.8 |
| Other** | 20 | 0.7 | 2.4 | 2.8 | 0.0 | 1.5 |
| *Caregiver Education* | | | | | | |
| 11 years or less | 590 | 45.2 | 59.6 | 44.9 | 44.2 | 29.3 |
| 12 years | 441 | 39.9 | 24.5 | 29.9 | 38.0 | 30.8 |
| >than 12 years | 319 | 14.9 | 15.9 | 25.2 | 17.8 | 39.9 |
| *Marital Status* | | | | | | |
| Married | 435 | 16.4 | 21.2 | 30.7 | 38.7 | 50.3 |
| Single | 633 | 68.2 | 67.3 | 42.1 | 44.0 | 19.2 |
| Separated | 103 | 7.5 | 2.4 | 9.1 | 8.6 | 9.8 |
| Divorced | 155 | 5.7 | 8.2 | 17.7 | 7.8 | 16.8 |
| Widowed | 24 | 2.1 | 0.8 | 0.4 | 0.8 | 4.0 |
| *Caregiver Income* | | | | | | |
| $14,999 or less | 796 | 71.0 | 77.5 | 61.0 | 62.0 | 35.4 |
| $15,000 - $24,999 | 260 | 17.8 | 13.1 | 19.9 | 24.1 | 22.9 |
| $30,000 - $39,999 | 153 | 7.2 | 7.0 | 12.0 | 10.1 | 19.7 |
| $40,000 - $49,999 | 44 | 2.5 | 1.2 | 2.0 | 1.7 | 8.0 |
| $50,000 or more | 69 | 1.4 | 1.2 | 5.2 | 2.1 | 14.0 |

LONGSCAN Child and Caregiver Characteristics by Sample*

* Cases with missing data are not included in percentages.

** Other race includes Native American, Asian, and Pacific Islander.

**Instrumentation**

This study used an existing secondary data set obtained free of charge from the NDACAN. In 1991, a collection of research studies, LONGSCAN, was initiated with grants from the NDACAN with coordination through North Carolina at Chapel Hill and five data collection sites. The individual sites conducted separate and exclusive research project on the etiology and impact of child maltreatment. The collaborative effort of each stand-alone project helped to give more weight to the findings (Hunter).

The funding agencies included the Office on Child Abuse and Neglect (OCAN), Children's Bureau, Administration for Children and Families, and the Department of Health and Human Services. The original study was conducted by the LONGSCAN Investigator Group, which include investigator(s) Desmond K Runyan, M.D., Dr.PH, Howard Dubowitz, M.D., Diana J. English, Ph.D., Jonathan Kotch, M.D., M.P.H., Alan Litrownik, Ph.D., and Richard Thompson, Ph.D. The investigators conducted face-to-face interviews, yearly telephone contacts, and periodic review of Child Protective Services case narratives and Central Registry records to collect their data. The data was collected from the following sites: Midwest, Southwest, Northwest, South & East (Hunter).

The original study used age-specific data collection points corresponding to critical periods in children's development, regardless of their exposure to child maltreatment. The LONGSCAN investigators chose measures based on ecological-development theory, and created the following guidelines: (1) measures of child experiences at major data collection points must reflect the salient developmental issues

for children of that age; (2) measurement instruments for individual data collection points must reflect each layer of the surrounding social systems which children develop within; (3) multiple organic informants such as parent, child, and teacher are used when available to consider possible situational specificity of child behavior and performance based on settings; (4) the research protocol includes a variety of sources to gather information surrounding neighborhood economics, crime, and social status with data on maltreatment collected from official records or personally from the families; (5) interviews were held within familiar environments, such as school or home, to heighten the possibility of ecological validity; and (6) the protocol was designed to incorporate the interviewer's own opinions and assessment regarding the validity of responses (Hunter).

The LONGSCAN study created instruments with a goal of cultural and developmental appropriateness, which was determined by conducting pre-tests and qualitative interviews to assess the comprehensibility and comprehensiveness of the measures before adopting the final series of questions for each major data collection point. To align with ecological systems theory, the interview questions were focused s on children's experiences within the family, school, neighborhood, and service system (Hunter).

The original LONGSCAN study utilized data to examine evidence of instrument reliability and validity. Cronbach's (1951) alpha coefficient assisted in the degree of internal consistency of scales. When appropriate, split-half reliability and report of initial examinations of the validity of these measures were used from the LONGSCAN samples. Correlation coefficients are categorized as criterion, concurrent, and predictive validity.

A few examination exceptions existed in construct validity by using factor analysis.

Furthermore, a researcher can observe evidence of internal validity when comparing the

relationship between risk and protective variables and maltreatment. If the respondents

are similar on variables other than maltreatment, there is a higher percentage of certainty

that observed differences in outcome are attributable to maltreatment.

## Data Gathering Procedures

The LONGSCAN dataset was obtained from the NDACAN. NDACAN requires

that all data recipients submit a completed Terms of Use Agreement (Appendix 1) to

protect the confidentiality of the study subjects and organizations. Data files are

distributed in the Statistical Package for the Social Sciences (SPSS) format, through a

secure Web download portal.

The researchers and faculty advisor had access to the secondary dataset variables.

When the data was not in use, the security of the data set was maintained by using a

password protected USB Flash drive in a locked cabinet at one researcher's home. The

raw survey and administrative record data are retained by NDACAN and the researchers

do not have access to the raw data. The secondary data files from NDACAN are

scheduled to be deleted from the researchers' computers by August 31, 2017.

## Data Analysis

The data was received in SPSS format. The data set contained 349 data files, with

each data file representing one measure used in the study. The data set was received with

six data dictionaries that correspond to the collection time. The researchers will be using

data file RNAB0603-Maltreatment Data collected for each child at age 8; DEA0603-

Caregiver Demographics collected for each child at age 8, and CSA063 Caregiver

Substance Use-collected for each child at age 8. The researchers used the instructions

provided by NDACAN to select cases and merge files to select data from just the

Northwest cohort and merge the three data files that correspond to the variables selected

for analysis. All variables were coded and frequency distributions and cross tabulation

were used to describe the relation caretaker marijuana use and substantiate child

maltreatment reports. The researchers recoded the variables related to frequency of use

to conduct a cross tabulation analysis. The recoded variable included two categories.

Chi Square tests were performed to analyze the relationships between the independent

variables (caretaker marijuana use and other demographic information) and dependent

variables (substantiated child maltreatment events). The variables had a nominal and

ordinal level of measurement. A p-value of 0.05 was used to determine significance with

a confidence level of 95%. Chi-square tests were also performed on variables with

nominal and ordinal level measurements.

**Protection of Human Subjects**

The application for human subjects was submitted to the California State

University, Division of Social Work Committee for the Human Subjects Review. The

application was accepted and approved as an "exempt" level of risk study by the research

review committee, and the researchers were given the human subjects Protocol #16-17-

007. The researchers could file for the exemption 45 CFR 46.101(b) (4) as a secondary

data analysis. Only the information that is pertinent to the outcomes of the study were

analyzed. All primary identifiers were removed from the secondary data set, and all

collection dates changed before the researchers received the dataset. The researchers signed a Terms of Use Agreement (Appendix 1) before obtaining the dataset that included a promise that all information would remain confidential and access to the dataset would be limited to the researchers and the faculty advisor. The secondary data files from NDACAN are scheduled to be deleted from the researchers' computers by August 31, 2017. All information regarding the rights and privacy of human subjects were understood and protected before launching the research project.

## Summary

The methodology for this research project was outlined in Chapter 3. The nature of quantitative research design was explored, including its exploratory approaches. Additionally, the subject population, instrumentation, and methods for obtaining data were discussed. In concluding the chapter, the process used for protecting human subjects was explained. In the next chapter, the data analysis is presented.

Chapter 4

**DATA ANALYSIS**

In this chapter, the researchers will examine data obtained from LONGSCAN

data set pertaining to caretaker demographic information, caretaker's marijuana use and

substantiated maltreatment. All demographics will be discussed and analyzed from the

frequency distributions. The analysis of the data will explore how caretaker marijuana

use interacts with substantiated maltreatment events. Chi-square tests will be used to

identify the relationship between the variables contained in the data set. The primary

objective of the study was to deliver investigation into the following research question:

how does the use of marijuana by a parent/caretaker affect the likelihood of substantiated

child maltreatment events. The purpose of exploring this topic was to gain insight into

whether marijuana use alters caregiver behaviors due to the current climate of marijuana

legalization. A summary will conclude the findings of all significant relationships of the

variables used in the data set.

**Demographics of Study Participants**

In this research, a total of 1,354 subjects participated in a longitudinal

LONGSCAN study. The researchers obtained the variables used in the data analysis

from separate measurement tools used in the original study, which was obtained through

qualitative and quantitative data collection methods. The different collection methods

result in a variance in N values for each variable as respondents potentially may have

refused to answer questions in one fata collection method and answered more freely in

another.  The extent to which this may have influenced the current study's findings will

be discussed in Chapter 5.

All the respondents in the study were female and most were African American

(46.2%) as shown in Figure 1.  As shown in Figure 2, the respondent's income was

commonly under $20,000.   Figure 3 shows that approximately 30% of respondents had

some college or higher education.  Caretaker marijuana use was assessed by asking have

you ever smoked marijuana (N=1061) and do you currently smoke marijuana (N=1120).

There were 1,060 people who reported they do not smoke marijuana and 60 people who

reported they do smoke marijuana.  In total 513 respondents that indicated they have

never smoked marijuana and 548 respondents admitted to smoking marijuana in the past.

Of those who reported marijuana use in the past (N=548), 75% reported they use less

than five times per month, while 25% reported using marijuana daily (Figure 4).
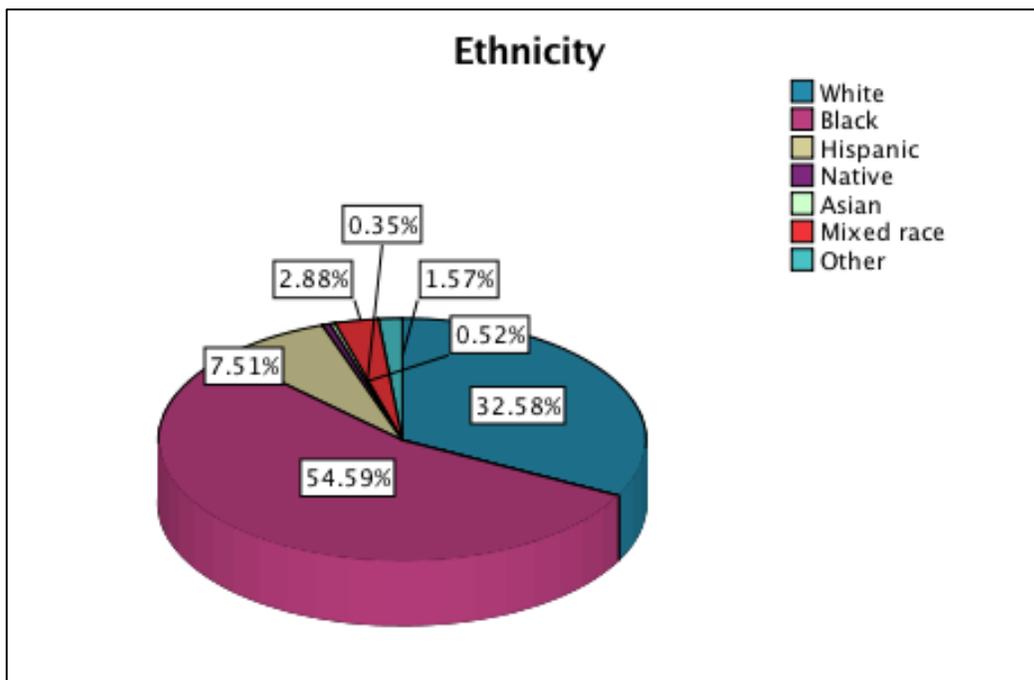
Figure 1. The ethnicity of Respondents/Caretakers.
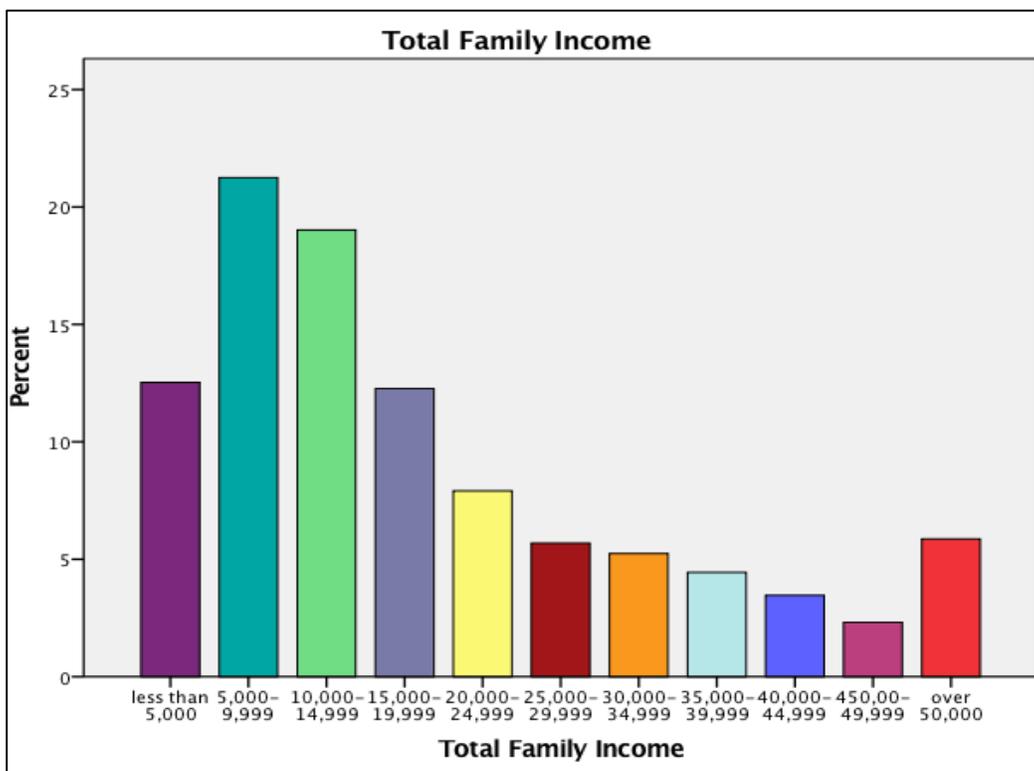


*Figure 2*. Total family income of Respondents/Caretakers.
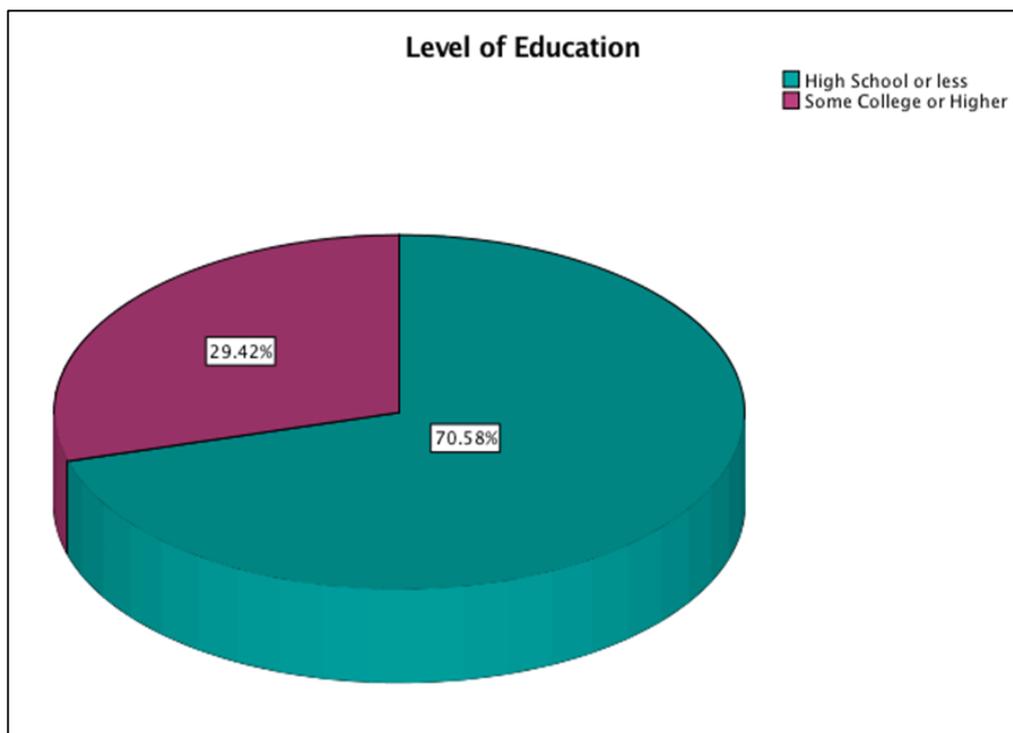
*Figure 3*. Respondent's level of education.
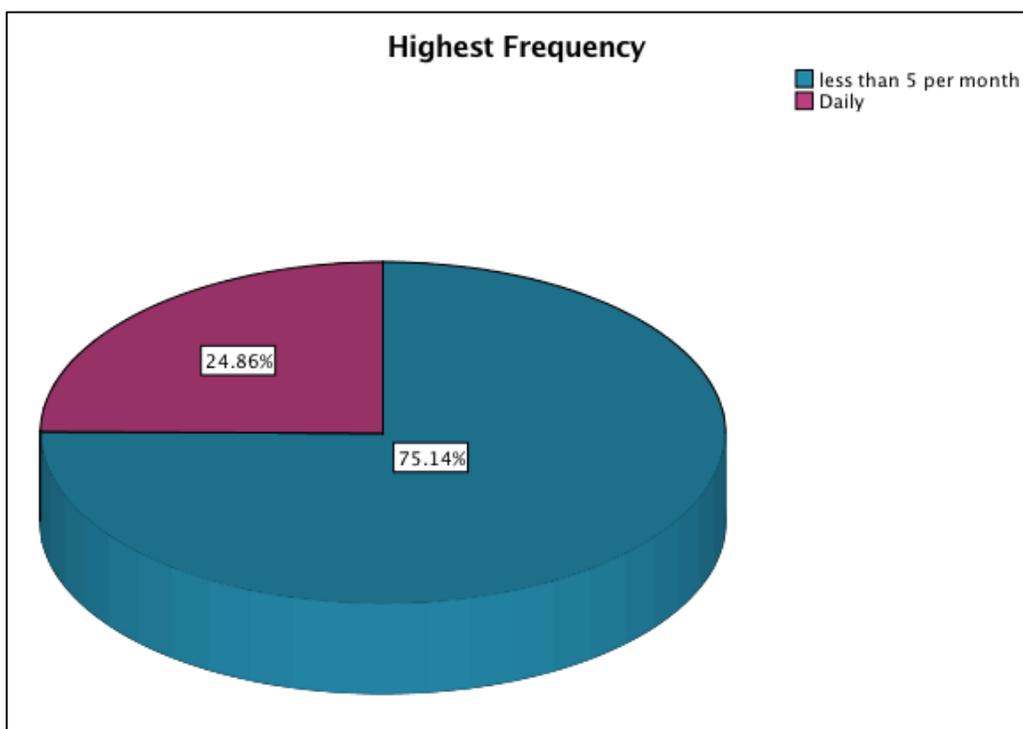


*Figure 4.* The highest frequency of marijuana use by Respondents/Caretakers.

Out of all 1,354 respondents, 94% had no substantiated child maltreatment cases (Figure 5). Neglect was the most substantiated form of child maltreatment with 56 cases having one or more substantiated neglect event (Figure 6). The physical abuse had 27 cases (2%) of cases with one or more substantiated event (Figure 7), and drug and alcohol related maltreatment had 27 and 28 cases with one or more substantiated event (Figure 8).
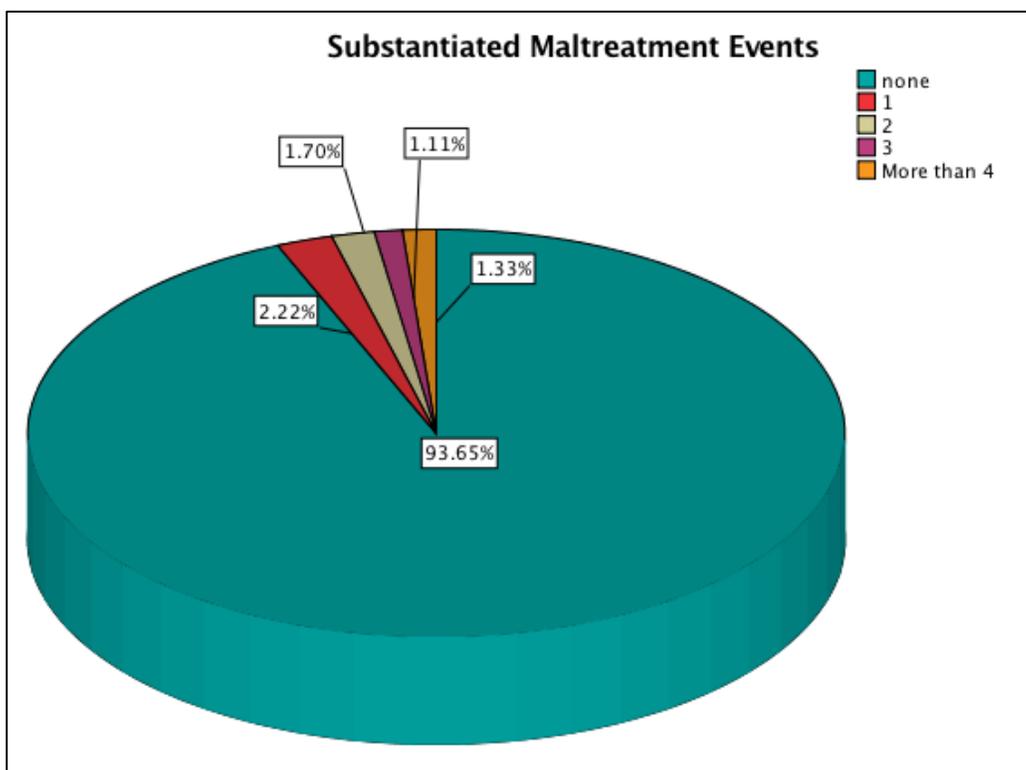


*Figure 5.* Substantiated Maltreatment Events
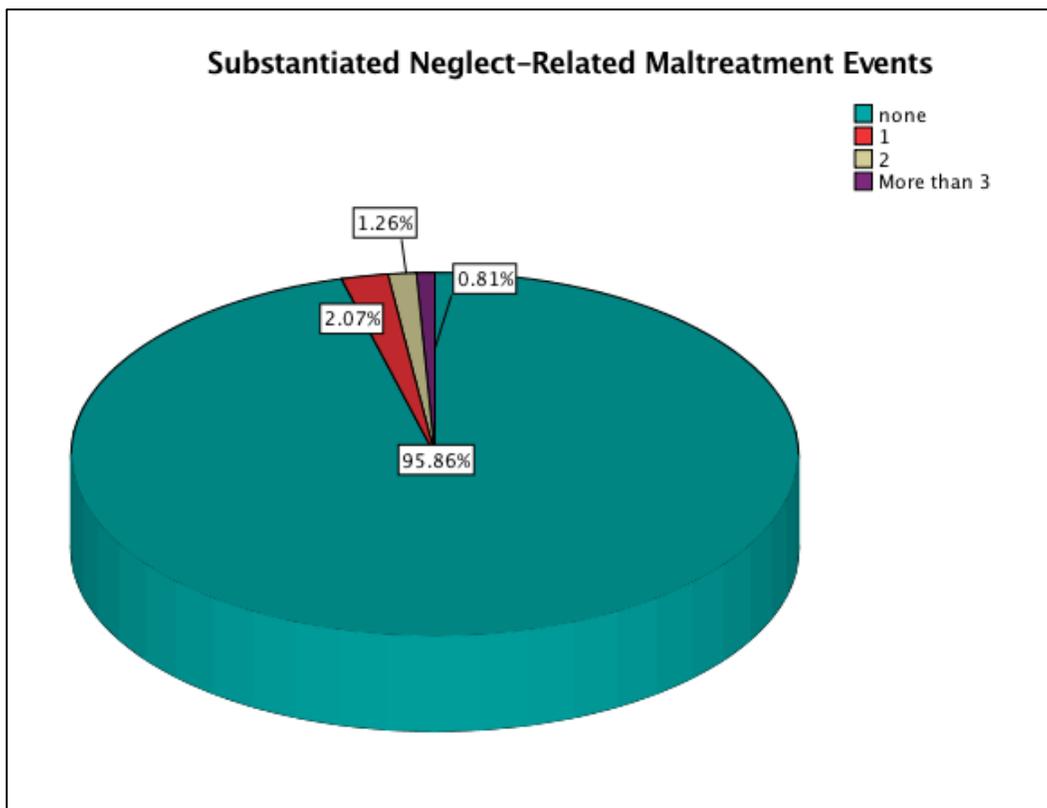
*Figure 6.* Substantiated Neglect-Related Maltreatment Events
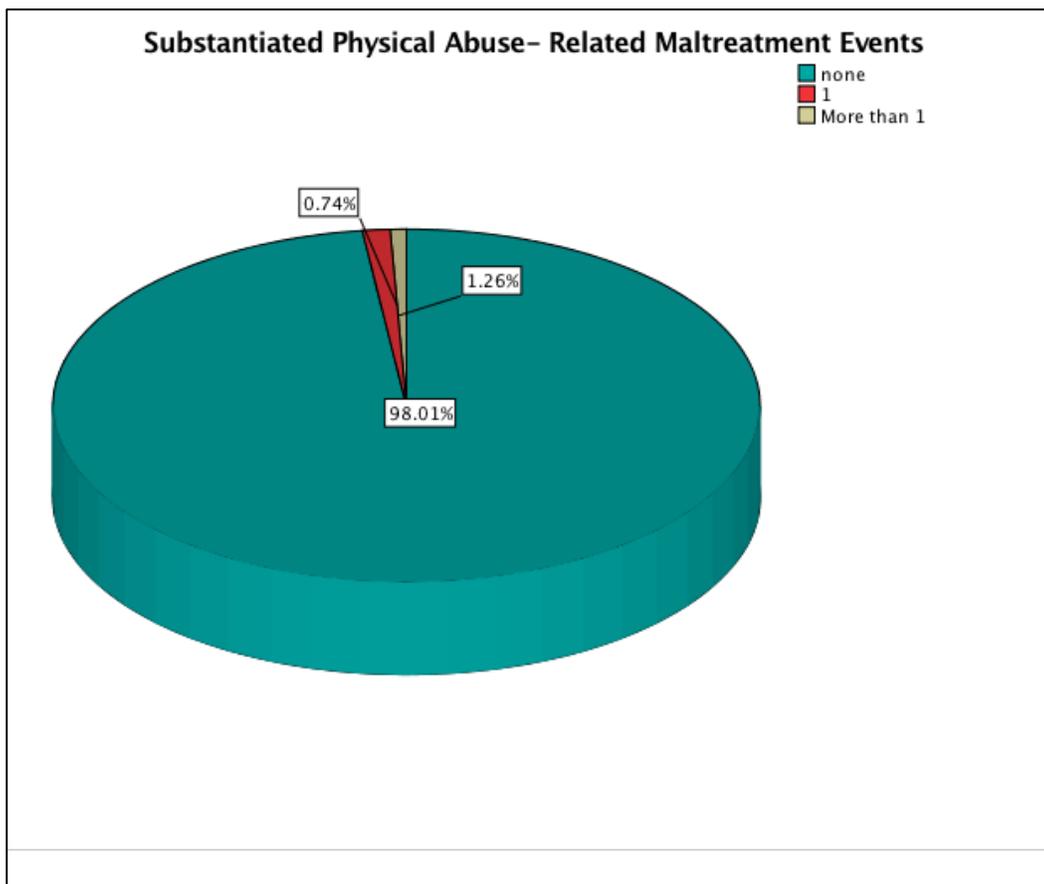
*Figure 7*. Substantiated Physical Abuse- Related Maltreatment Events
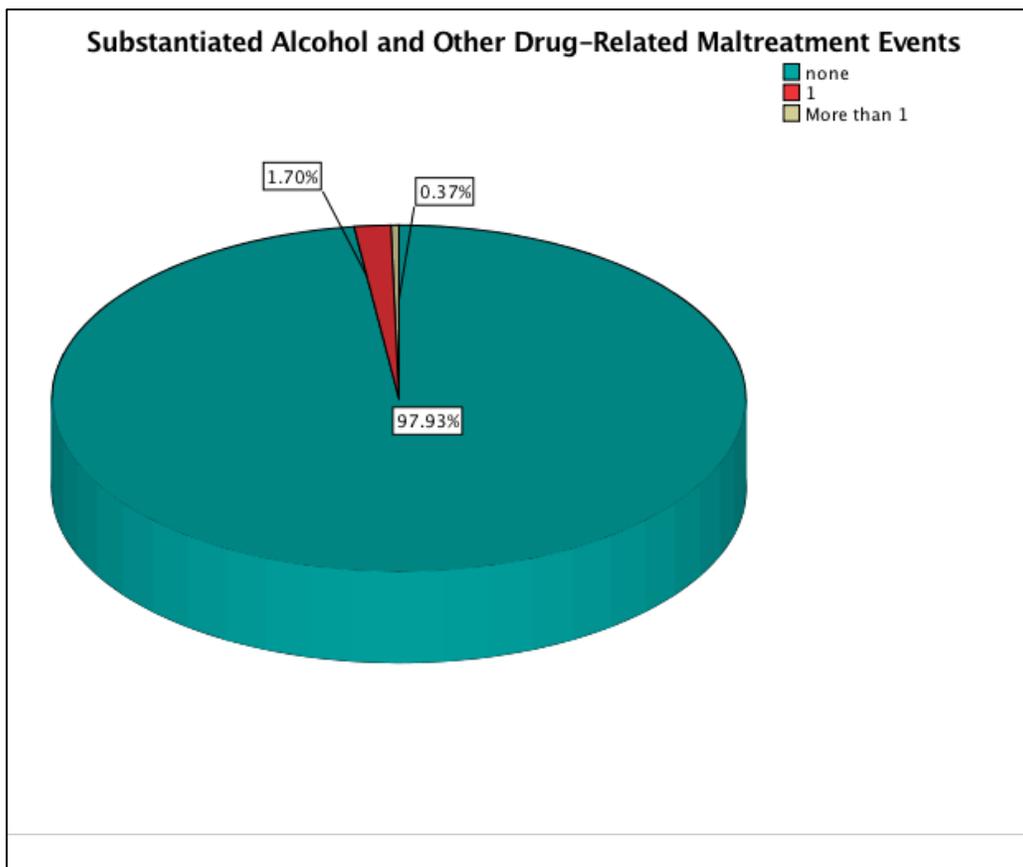
*Figure 8*. Substantiated Alcohol and Other Drugs- Related Maltreatment Events

**Current Marijuana Use and Child Maltreatment**

A chi-square was computed to analyze whether a caretaker's current marijuana use plays a role in the likelihood of child maltreatment occurring in the home. There were 1,118 total cases responding to the question about current marijuana use, but the dataset included 236 missing cases. The distribution in Table 4.1 shows there were that 93.5% (N=1,049) reported that they did not currently use marijuana. Of the 60 cases that disclosed current marijuana use none of the cases had substantiated child maltreatment. The chi-square test did reach significance ($\chi^2$=4.170, df=1, p=.041), but there was one cell with an expected count less than five. The statistical analysis conducted on current marijuana use and physical abuse maltreatment events did not reach statistical significance. The statistical analysis conducted on current marijuana use and neglect maltreatment events was approaching significance with the p-value= 107. The statistical analysis conducted on current marijuana use and alcohol and other drug-related maltreatment events did not reach statistical significance.

Table 4.1
*Current Marijuana Use and Child Maltreatment*

|  |  |  | Substantiations | | Total |
|---|---|---|---|---|---|
|  |  |  | none | 1 or more |  |
| Do you smoke marijuana | No | Count | 989 | 69 | 1058 |
|  |  | % within do you smoke marijuana | 93.5% | 6.5% | 100.0% |
|  |  | % within Substantiations | 94.3% | 100.0% | 94.6% |
|  |  | % of Total | 88.5% | 6.2% | 94.6% |
|  | Yes | Count | 60 | 0 | 60 |
|  |  | % within do you smoke marijuana | 100.0% | 0.0% | 100.0% |
|  |  | % within Substantiations | 5.7% | 0.0% | 5.4% |
|  |  | % of Total | 5.4% | 0.0% | 5.4% |
| Total |  | Count | 1049 | 69 | 1118 |
|  |  | % within do you smoke marijuana | 93.8% | 6.2% | 100.0% |
|  |  | % within Substantiations | 100.0% | 100.0% | 100.0% |
|  |  | % of Total | 93.8% | 6.2% | 100.0% |

**Historical Marijuana Use and Child Maltreatment**

This section will explore the association between caretaker's past marijuana use and substantiated maltreatment events. Also, it will explore if there is any statistical significance is influenced by the specific type of child maltreatment.

A chi-square was computed to analyze whether a caretaker's past use of marijuana impacts the likelihood of child maltreatment occurring in the home. Out of 1,354 total cases with substantiated maltreatment events, there were 295 missing cases in the dataset. The distribution in Table 4.2 shows that of 1,059 cases included in the analysis, 51% reported they have used marijuana in the past. Of those disclosing past marijuana use, six percent had one or more substantiated child maltreatment cases. The chi-square test was not statistically significant.

**Historical Marijuana Use by Type of Maltreatment**

This subsection will analyze the dataset by using the variables broken down by the maltreatment type. There was a total of 1,354 cases for each type of maltreatment, with 293 missing cases in the dataset. The analysis on each maltreatment type did not reach statistical significance.

In total, 23 cases had one or more substantiated physical abuse maltreatment events, and 13 of these cases disclosed past marijuana use. The data analysis on historical marijuana use and substantiated physical maltreatment events was not statistically significant.

In total 44 cases had one or more substantiated neglect abuse maltreatment events, 22 of these cases disclosed past marijuana use.  The data analysis on historical marijuana use and substantiated neglect maltreatment events did not reach statistical significance.

In total, 22 cases had one or more substantiated child maltreatment events related to alcohol and other drugs, 12 of these cases disclosed past marijuana use.  The data analysis on historical marijuana use and substantiated child maltreatment events involving alcohol and other drugs was not significant.

Table 4.2
*Historical Marijuana Use and Child Maltreatment*

|  |  |  | Substantiations | | Total |
|---|---|---|---|---|---|
|  |  |  | none | 1 or more |  |
| Have you ever smoked marijuana | No | Count | 476 | 37 | 513 |
|  |  | % within have you ever smoked marijuana | 92.8% | 7.2% | 100.0% |
|  |  | % within Substantiations | 48.1% | 53.6% | 48.4% |
|  |  | % of Total | 44.9% | 3.5% | 48.4% |
|  | Yes | Count | 514 | 32 | 546 |
|  |  | % within have you ever smoked marijuana | 94.1% | 5.9% | 100.0% |
|  |  | % within Substantiations | 51.9% | 46.4% | 51.6% |
|  |  | % of Total | 48.5% | 3.0% | 51.6% |
| Total |  | Count | 990 | 69 | 1059 |
|  |  | % within have you ever smoked marijuana | 93.5% | 6.5% | 100.0% |
|  |  | % within Substantiations | 100.0% | 100.0% | 100.0% |
|  |  | % of Total | 93.5% | 6.5% | 100.0% |

## Historical Frequency of Marijuana Use and Child Maltreatment

This section will explore the association between the frequency of caretaker's past marijuana use and substantiated maltreatment events. Also, it will explore if there is any statistical significance is influenced by the specific type of child maltreatment. A chi-square was computed to analyze whether the frequency of caretaker's past use of marijuana impacts the likelihood of child maltreatment occurring in the home. Out of 1,354 total cases with substantiated maltreatment events, there were 809 missing cases in the dataset. The distribution in Table 4.3 shows that of 545 respondents, 75% reported smoking less than five times per month and 25% reported smoking marijuana daily. Respondents disclosing marijuana use of fewer than five times per month 59% had one or more substantiated maltreatment events. Those choosing to disclose marijuana use daily 10% had one or more substantiated maltreatment events. The statistical analysis was statistically significant ($\chi^2$=4.458, df=1, p=.035).

Table 4.3

*Historical Frequency of Marijuana Use and Child Maltreatment*

| | | | Substantiations | | |
|---|---|---|---|---|---|
| | | | none | 1 or more | Total |
| what is the most you ever smoked | less than 5 per month | Count | 390 | 19 | 409 |
| | | % within what is the most you ever smoked | 95.4% | 4.6% | 100.0% |
| | | % within Substantiations | 76.0% | 59.4% | 75.0% |
| | | % of Total | 71.6% | 3.5% | 75.0% |
| | Daily | Count | 123 | 13 | 136 |
| | | % within what is the most you ever smoked | 90.4% | 9.6% | 100.0% |
| | | % within Substantiations | 24.0% | 40.6% | 25.0% |
| | | % of Total | 22.6% | 2.4% | 25.0% |
| Total | | Count | 513 | 32 | 545 |
| | | % within what is the most you ever smoked | 94.1% | 5.9% | 100.0% |
| | | % within Substantiations | 100.0% | 100.0% | 100.0% |
| | | % of Total | 94.1% | 5.9% | 100.0% |

**Historical Frequency of Marijuana Use by Type of Maltreatment**

This subsection will analyze the dataset by using the variable of historical frequency broken down by the maltreatment type. There was a total of 1,354 cases for each type of maltreatment, with 807 missing cases in the dataset. The analysis showed only physical abuse reached statistical significance.

Table 4.4 shows out of a total of 2.4% cases had one or more substantiated physical abuse maltreatment events, 0.7% disclosed daily use and 1.6% disclosed less than five times per month of marijuana use. The data analysis on the frequency of marijuana use and substantiated physical maltreatment events was not statistically significant $(\chi^2=.249$, df=1, p=.618$)$, and the results are invalid because one cell had less than the expected minimum count.

Table 4.5 shows the cross-tabulation of substantiated neglect maltreatment events and frequency of past use. In a total of 4.0% cases had one or more substantiated neglect abuse maltreatment events, it was an even split for each frequency category and substantiated child maltreatment events. The data analysis on the frequency of marijuana use and substantiated neglect maltreatment events did reach statistical significance $(\chi^2=7.753$, df=1, p=.005$)$.

Table 4.6 shows the cross-tabulation of substantiated alcohol and other drug related maltreatment events and frequency of past use. In a total of 2.2% cases had one or more substantiated maltreatment events related to alcohol and other drugs, it was an even split for each frequency category and substantiated child maltreatment events.

The data analysis on the frequency of marijuana use and substantiated maltreatment

events related to alcohol and other drugs did reach statistical significance ($\chi^2$=4.150,

df=1, p=.042).

Table 4.4
*Historical Frequency of Marijuana Use and Physical Abuse*

| | | | Physical Abuse Sub | | |
|---|---|---|---|---|---|
| | | | None | 1 or more | Total |
| What is the most you ever smoked | Less than 5 per month | Count | 402 | 9 | 411 |
| | | % within what is the most you ever smoked | 97.8% | 2.2% | 100.0% |
| | | % within Physical Abuse Sub | 75.3% | 69.2% | 75.1% |
| | | % of Total | 73.5% | 1.6% | 75.1% |
| | Daily | Count | 132 | 4 | 136 |
| | | % within what is the most you ever smoked | 97.1% | 2.9% | 100.0% |
| | | % within Physical Abuse Sub | 24.7% | 30.8% | 24.9% |
| | | % of Total | 24.1% | 0.7% | 24.9% |
| Total | | Count | 534 | 13 | 547 |
| | | % within what is the most you ever smoked | 97.6% | 2.4% | 100.0% |
| | | % within Physical Abuse Sub | 100.0% | 100.0% | 100.0% |
| | | % of Total | 97.6% | 2.4% | 100.0% |

*Table 4.5*
*Historical Frequency of Marijuana Use and AOD*

| what is the most you ever smoked * AOD | | | | | |
|---|---|---|---|---|---|
| | | | AOD | | |
| | | | none | 1 or more | Total |
| what is the most you ever smoked | less than 5 per month | Count | 405 | 6 | 411 |
| | | % within what is the most you ever smoked | 98.5% | 1.5% | 100.0% |
| | | % within AOD Substant | 75.7% | 50.0% | 75.1% |
| | | % of Total | 74.0% | 1.1% | 75.1% |
| | Daily | Count | 130 | 6 | 136 |
| | | % within what is the most you ever smoked | 95.6% | 4.4% | 100.0% |
| | | % within AOD Substant | 24.3% | 50.0% | 24.9% |
| | | % of Total | 23.8% | 1.1% | 24.9% |
| Total | | Count | 535 | 12 | 547 |
| | | % within what is the most you ever smoked | 97.8% | 2.2% | 100.0% |
| | | % within AOD Substant | 100.0% | 100.0% | 100.0% |
| | | % of Total | 97.8% | 2.2% | 100.0% |

Table 4.6
*Historical Frequency of Marijuana Use and Neglect*

**Other**

| what is the most you ever smoked * Neglect Sub Crosstabulation | | | | | |
|---|---|---|---|---|---|
| | | | Neglect Sub | | Total |
| | | | none | 1 or more | |
| what is the most you ever smoked | less than 5 per month | Count | 400 | 11 | 411 |
| | | % within what is the most you ever smoked | 97.3% | 2.7% | 100.0% |
| | | % within Neglect Sub | 76.2% | 50.0% | 75.1% |
| | | % of Total | 73.1% | 2.0% | 75.1% |
| | Daily | Count | 125 | 11 | 136 |
| | | % within what is the most you ever smoked | 91.9% | 8.1% | 100.0% |
| | | % within Neglect Sub | 23.8% | 50.0% | 24.9% |
| | | % of Total | 22.9% | 2.0% | 24.9% |
| Total | | Count | 525 | 22 | 547 |
| | | % within what is the most you ever smoked | 96.0% | 4.0% | 100.0% |
| | | % within Neglect Sub | 100.0% | 100.0% | 100.0% |
| | | % of Total | 96.0% | 4.0% | 100.0% |

**Other Factors Influencing Perspective of Mental Illness and Services**

Other demographic factors such as ethnicity, highest education level, income, and family size may influence the likelihood of substantiated child maltreatment events. As reflected in the literature review, family demographics are commonly associated with child maltreatment. However, these associations must be considered cautiously because demographic factors occur in a complex network of interconnected social and cultural factors. Therefore, any significant results are likely due to extraneous and co-occurring variables. Furthermore, the participants in the original LONGSCAN study were recruited to represent varying levels of maltreatment that were determined by the presence of specific risk factors or indicators of child maltreatment. These indicators and risk factors include demographics such as race/ethnicity, income level, and education level. The selection criteria resulted in a sample population that is mostly low-income and African-American. The researchers believe that due to the nature of the data set and because most respondents fall into one category for each demographic variable any potential significance reached in the analysis of demographic factors could not truly be interpreted as factors that influence child maltreatment so cross tabulation analysis was not conducted.

**Summary**

The chapter of this research analyzed caretaker marijuana use and substantiated maltreatment events. This analysis included current use of marijuana, past use of marijuana, and the frequency of past use, as well as looked at maltreatment events by type. The statements that were analyzed were specifically chosen to help answer the

research question.  The next chapter will discuss and conclude all the findings of the data.

Implications for social work practice and policy, research limitations, and

recommendations will also be discussed.

Chapter 5

**CONCLUSION**

This chapter summarizes and concludes the research findings and data that were

gathered in this study.  This chapter will also discuss the limitations of the study,

implications for social work practice and policy, as well as recommendations for future

research.

**Summary**

The purpose of this research study is to analyze data related to the relationship of

marijuana use and child maltreatment cases.  The data analysis between marijuana use

and child maltreatment was inconclusive.  Much of the data analysis proved to be

inconclusive or not statistically significant.  A statistical analysis was not conducted on

the demographics of participants because participants were included in the study based on

specific race and income identifiers.

The data analysis on marijuana use and child maltreatment was inconclusive.

When the researchers conducted further analysis by the type of maltreatment event and

those returned insignificant.  However, current marijuana use and neglect approached

significance.  These results indicate there may be no association between marijuana use

and child maltreatment.  This is a result due to very few participants reporting personal

marijuana use or having substantiated maltreatment events.  Limitations affected the

numbers of participants reporting, which will be discussed later in this chapter.

The researchers analyzed data on historical marijuana use and child maltreatment

events in total, as well as by individual type.  All findings proved to not reach statistical

significance. Participants self-disclosed in higher numbers about past marijuana use versus current marijuana use. Overall, there was a small percentage of participants with substantiated child maltreatment events. More than 90% of participants had no substantiated maltreatment events, regardless of marijuana ingestion in the past.

The researchers found there is some interaction between caretaker's frequency of marijuana use and child maltreatment. In addition, the analysis of individual types of child maltreatment reached significance. The analysis indicates that those participants reporting daily use of marijuana had more maltreatment events than those reporting less than five times per month. However, caution should be exercised when interpreting the data due to very small numbers of participants reporting daily use and very few maltreatment events. Many participants (95%) reported using less than five times per month and had no maltreatment events.

## Discussion

The data collected from the LONGSCAN study revealed caretaker marijuana use does not play an important role in child maltreatment events. However, there is significance between the frequency of the caretaker's marijuana use and type of child maltreatment events. This study has no significant result in answering the research question of how does the use of marijuana by a parent/caretaker affect the likelihood of substantiated child maltreatment events.

The factors that influence child maltreatment is a well-studied research area. The literature reviewed indicates that social factors, cognitive function, mental health issues, and substance abuse are indicators of child maltreatment (Dubowitz, et al., 2011; Hein et

al., 2010; Kelley, et al., 2015; Lee, Taylor, & Bellamy, 2012; Palusci, 2011; Putnam-

Hornstein & Needell, 2011; Rodriguez & Tucker, 2015; Slack et al., 2011; Stanton-

Tindall, Sprang, et al., 2013; Thornberry et al., 2014). However, the literature on child

maltreatment and substance abuse focuses on alcohol and narcotics (Dubowitz, et al;

Hein et al.; Kelley, et al.; Lee et al; Rodriguez & Tucker; Slack et al; Stanton-Tindall et

al.). There is very little research examining child maltreatment and marijuana. The

literature reviewed for this study emphasizes using caution when concluding causality of

any sociodemographic factors because such factors are interrelated and co-occur with

child maltreatment. This study did not conduct a statistical analysis on demographic

factors for the same reason and because respondents met criteria that indicated they fell

into specific categories. The result is the participants of the current study are primarily

African American and have household earnings under the poverty line.

Overall, the results of the current study were mostly not significant or

inconclusive. The data gathered was skewed in where most participants (sometimes as

high as 90%) did not report marijuana use and did not have substantiated maltreatment

events. It is reasonable to assume that many people did not answer honestly regarding

marijuana use given the nature of the original study. This will be discussed further in the

limitations section. The substantiated maltreatment events came directly from child

welfare data collection systems and revealed that most participants did not have

substantiated maltreatment events regardless of substance use or demographic

characteristics. This supports the notion that while ethnicity and income are common

predictors of child maltreatment, they are not causes of child maltreatment. The reality is

that most people living in poverty and most African Americans do not abuse their

children (Palusci, 2011).  There is significant research exploring the disproportionality of

certain minorities in the child welfare system (Child Welfare Information Gateway,

2016).  A potential explanation is found by some research stating minorities have a

higher rate of poverty, increasing unmet basic needs and decreasing resources and social

support (Child Welfare Information Gateway).  This is an area of research that needs

further study and a formal response from the child welfare system.

The literature available on marijuana use and its effects on cognition and behavior

indicate that any effects are dependent on the frequency of use (Ansell et al., 2015; Bonn-

Miller & Zvolensky, 2009; Ellickson et al., 2004; Hart et al, 2010; Ramaekers et al.,

2009; Thames, Arbid & Sayegh, 2014; van Ours & Williams, 2011).  The literature also

indicated that it is difficult to tell if marijuana use leads to cognitive and behavior deficits

or if those with cognitive and behavioral deficits are more likely to use marijuana

(Boden, et. al, 2012; Bonn-Miller & Zvolensky; Ostrowsky, 2011; Raemakers et al.;

Smith et al., 2013; Van Ours & Williams; Wilkinson, Halpern & Herring, 2016).  The

researchers found that frequency did interact with substantiated maltreatment events.  The

statistical findings of the current study indicate that those with less marijuana use are less

likely to have an occurrence of child maltreatment.  This conflicts with previous literature

that found more frequent use had less of an impact on behavior (Ellickson et al.;

Ramaekers, et al.; Thames, Arbid & Sayegh).  However, Bonn-Miller and Zvolensky

(2009) found that frequency has a more complex interaction with negative outcomes.

Specifically, Bonn-Miller and Zvolensky showed that those with mild and severe

marijuana use had less negative outcomes than those with moderate use. The current study did not account for moderate users, so further analysis would need to be conducted to see if the results reflect this finding.

The literature examining marijuana use and potential to harm children indicates that caretaker use increases the risk for child exposure to marijuana and parental neglect (Onders, et al., 2016; Wang, Narang, Wells, and Chuang, 2011, 2013). The current study of marijuana use and neglect did approach statistical significance, which supports this previous finding. The presence of marijuana introduces another variable in which the caretaker must be actively protecting the child from by way of exposure or possible ingestion. There is a higher risk for the caretaker in these households to neglect their extra responsibility surrounding the substance and result in a neglect maltreatment event.

**Implications for Social Work Practice and Policy**

The legalization of marijuana is rapidly sweeping the nation and so it is important to understand how the use of this drug impacts caretaker's ability to provide care. Additionally, the federal government passed the Comprehensive Addiction and Recovery Act (P.L. 114-198). This federal act is an effort to address children affected by substance use. It changes existing law to require a referral to child welfare system on all substances, not just illegal substances and requires states address the health needs of infants resulting from caretaker's substance use. The law leaves room for states to interpret what constitutes "substance exposure," issue guidelines for how child welfare should respond. While the law was intended to address prescription opioids use, it will have a direct impact on how child welfare agencies respond to caretaker's marijuana use

because they are required to assess any substance exposure. This legislation makes research on marijuana use and child maltreatment a priority to inform the policies that must be developed with the new mandate.

The Council on Social Work Education's (CSWE) Educational and Policy Accreditation Standards (EPAS) defines 10 competencies (EP 2.1.1-EP 2.1.10), which are as follows: EP 2.1.1 Identify as a social worker and conduct oneself accordingly; EP 2.1.2 Apply social work principles to guide professional practice; EP 2.1.3 Apply critical thinking to inform and communicate professional judgments; EP 2.1.4 Engage diversity and difference in practice; EP 2.1.5 Advance human rights and social and economic justice; EP 2.1.6 Engage in research-informed practice and practice-informed research; EP 2.1.7 Apply knowledge of human behavior and the social environment; EP 2.1.8 Engage in policy practice to advance social and economic well-being and to deliver effective social work services; EP 2.1.9 Respond to contexts that shape practice; EP 2.1.10 (a)-(d) Engage, assess, intervene, and evaluate with individuals, families, groups, organizations, and communities; EP 2.1.10 (a) Engagement; EP 2.1.10 (b) Assessment; EP 2.1.10 (c) Intervention; EP 2.1.10 (d) Evaluation (CSWE Commission on Accreditation, 2016).Social workers are expected to possess certain competencies in regards to basic social work practice. By developing a research study that looks at the relationship between caretaker's marijuana use and likelihood of child maltreatment, the researchers could demonstrate competence in areas such as applying critical thinking to inform and communicate professional judgments, advance human rights, social, and economic justice, engage in research-informed practice and practice-informed research,

and apply the knowledge of human behavior and the social environment.

By analyzing substantiated cases with marijuana use involvement the researchers could garner whether there is a causal relationship or not. Due to research on this topic being so minimal, it allowed the researchers to practice informed research and contribute to its development and to advocate for further research. Furthermore, future research would allow social workers to engage in research-informed practice and develop evidence-based interventions for this growing issue within child welfare. Another competence the researchers demonstrated by completing this research study was to advance human rights, social, and economic justice. Since marijuana recently came legalized it is a key issue which will need to be addressed by the justice system and the child welfare system. The analysis allowed the researchers to apply the knowledge of human behavior and the social environment by using the information gathered to make recommendations.

The changing legislation around marijuana, its legality, and child welfare has implications for micro and macro social work. The implications for micro social work is that social workers will need to be trained on the effects of marijuana use and the potential impact on children. This will ensure social workers continue to meet the ethical value of competence by increasing their professional knowledge and applying it to practice (National Association of Social Workers, 1999). Child welfare social workers will need to consider this knowledge in their investigation and assessment of all referrals. Social workers cannot automatically assume that caretaker's marijuana use will have a negative impact on the children. Furthermore, they cannot overlook the possibility of

child maltreatment occurring simply because marijuana is classified as a legal substance. Social workers need to understand how marijuana use can play a role in a family's culture. The culture of marijuana use can lead to both strengths and deficits in the family functioning. Child welfare social workers will need to acknowledge any personal bias and demonstrate cultural humility when providing services.

The mezzo level of social work will be impacted by the need for community engagement through grass roots programs bridging the individual clients needs to the larger social issues. Social workers can engage caretaker's in marijuana education through community events and meetings. The meetings also provide an avenue for the social workers to monitor whether a cultural shift is occurring or not.

The implications for macro social work is that social workers will need to be proactive in advocating for child welfare policies to prevent child maltreatment in the household and the community include education and awareness of the potential dangers for caretakers who use marijuana and prevention education for youth whose parents use marijuana. Furthermore, child welfare policy makers will need to ensure that the current regulations account for caretaker marijuana use and its potential danger to children.

**Recommendations**

The purpose of this study was to explore the relationship between caretaker marijuana use and child maltreatment. The following section includes a recommendation list of future research and resolution to better improve the findings of this study.

- The research examining marijuana use and child maltreatment is not sufficient to adequately determine if any association exists. Child welfare agencies and policy

makers should continue to assess the totality of circumstances that garnered child welfare involvement. A caretaker's marijuana use should only be addressed to the extent that it is harming a child regardless of its legal status.

- For future studies, researchers should try to take a random sample of populations to determine the relationship between marijuana use and child maltreatment. Specifically, participants should not be selected based on demographic factors so that an extensive analysis can be done to determine other factors that may be contributing to child abuse and neglect. The researchers chose to utilize secondary data which did not provide a comprehensive understanding of caretaker's marijuana use and its implications for child maltreatment. The secondary data created a limitation to a specific population.

- In the questionnaire, it should be designed in a manner that that does not rely on participant's self-disclosure of substance use. Self-reporting creates limitations in honesty due to fear of repercussions or consequences.

- Future studies could explore methods of assessment to provide effective child welfare services for the community.

## Limitations

In this study, the limitations include the method of selecting participants, the longitudinal designs of the study, the large number of missing cases from variables, and the self-report collection of substance use information. The sample population was large enough for the data analysis. However, there were very little differences in the sample population because of participants of the selection criteria of the LONGSCAN study.

The lack of diversity in the sample population rendered much of the data analysis to be inconclusive. If the researchers were to extend this study to include people with varying social demographic factors, there may have been more substantial findings. The longitudinal nature of the study also limited the findings of this study.

The data was collected over an 18-year period, making it difficult to generalize the results to the current social context within the country. The use of secondary data made the researcher have less control in the data collection methods. The secondary data set included a lot of information based on self-reports and missing values. While the data set included 1,354 cases, much of the analysis was based on less than five hundred cases. There was a lot of absence data unaccounted for in the original study. In effect, the present study could not adjust for this missing information because of the use of secondary data.

Much of the data was collected from self-reports of participants, which therefore limited the validity of the data. The study was primarily centered on child maltreatment, and it is likely that participants did not disclose marijuana use out of fear of being reported to child welfare. This information was collected in the early 1990s when the war against marijuana was at its peak (Lee, 2012), which may account the low numbers of participants that disclosed marijuana use. It is probably that had this information been collected today there would be a larger number of participants willing to admit to marijuana use, which could have drastically changed the results of the data analysis.

**Conclusion**

The primary purpose of this study was to explore if a caretaker's marijuana use impacts child maltreatment. The research data and findings from Chapter 4 were discussed. The literature review in Chapter 2 was used to analyze the finding of this study. The implications for social work practice and policy, limitations of the current study, and recommendations for future research were reviewed in this chapter. In conclusion, the research was unable to find significant differences in the number of child maltreatment events for caretakers that use marijuana, whether presently or in the past. There were significant findings when the frequency of use was considered indicating that those caretakers who use marijuana more frequently have a higher likelihood of having a substantiated maltreatment event. However, these findings must be interpreted cautiously because 95% of participants did not disclose marijuana use or have substantiated maltreatment events. It is important for child welfare social workers to be competent when addressing caretaker marijuana use in practice, as it should only be evaluated to the extent that it has an impact on the child's safety and well-being.

**Appendix**

Appendix 1. *Terms of Use Agreement National Data Archive on Child Abuse and Neglect*

The Investigator accepts the definitions as described and agrees to follow the terms and

conditions outlined in this Agreement:

I.      DEFINITIONS

a.  Investigator: The person who serves as the primary point of contact for all

communications involving this Agreement. The Investigator is the person

primarily responsible for analysis and other use of Research Data obtained

through this Agreement. The Investigator must have a research-related

affiliation with an institution or be granted an exception from NDACAN when

allowed by NDACAN procedures. Undergraduate students may serve as

Investigators if a faculty advisor co-signs this document.

b.  Institution:   An organization or business that is registered as a legal entity.

c.  NDACAN:  The National Data Archive on Child Abuse and Neglect at Cornell

University acting on behalf of the Children's Bureau, Administration for

Children, Youth and Families, U.S. Department of Health and Human Services.

d.  The promise of Confidentiality: A promise to a Research Subject that the

information the respondent provides will not be disseminated without the

permission of the respondent; that the fact that the respondent participated in

the study will not be disclosed; and that disseminated information will include

no linkages to the identity of the respondent. Such a promise encompasses

traditional notions of both confidentiality and anonymity. Names and other

identifying information regarding respondents, proxies, or other persons on whom the respondent or proxy provides information, is presumed to be confidential.

e.  Research Data: The original data provided by NDACAN and any variables derived from the original data. Data resulting from merges or matches to the original or derived variables are included in this definition. Aggregated statistical summaries of data and analyses, such as tables and regression statistics, are not considered "derived data" for the purposes of this Agreement.

f.  Research Subject: A person, family, household, or organization observed for purposes of research and to whom a promise of confidentiality has been given. A Research Subject includes any person providing information to a study or on whose behalf a proxy provides information.

g.  Statistical Purposes: The description, estimation, or analysis of the characteristics of groups, without identifying the individuals that comprise such groups; and includes the development, implementation, or maintenance of methods, technical or administrative procedures, or information resources that support the aforementioned purposes.

II.  PRIVACY OF RESEARCH SUBJECTS

a.  Any intentional identification of a Research Subject or unauthorized disclosure of confidential information violates the Promise of Confidentiality given to the providers of the information. Therefore,

b.  The Research Data will be used solely for research or statistical purposes.

    c.   No attempt will be made to identify Research Subjects.

    d.   If the identity of any Research Subject is discovered inadvertently, no use will be made of this knowledge; NDACAN will be advised of the discovery; the identifying information will be safeguarded or destroyed as requested by NDACAN, and no one else will be informed of the discovered identity.

III.     ACCESS TO THE RESEARCH DATA

    a.  Access to the Research Data is limited exclusively to the Investigator and to colleagues who also have a signed Terms of Use Agreement on file with NDACAN.

    b.  The Research Data will be protected from loss, theft, or unauthorized access.

    c.  The Investigator has followed the policies and procedures for conducting research that is in place at the Investigator's institution.

IV.     ACKNOWLEDGMENTS

    a.  All books, articles, conference papers, theses, dissertations, reports, or other publications that employed the Research Data or other resources provided by NDACAN will acknowledge both NDACAN and the original collectors of the Research Data.

    b.  Citations of published work using Research Data will be sent to NDACAN for inclusion in a database of related publications.

V.    OWNERSHIP OF THE DATA

    a.  Permission to use the Research Data may be revoked by NDACAN at any time, at its discretion. The Investigator must return all originals and destroy all copies

of the Research Data, on whatever media they exist, within 5 days of written request to do so. Failure to comply may be considered a material breach of the Terms of Use Agreement.

    b. The Investigator will not make any claim to copyright ownership of the Research Data and accompanying documentation.

VI. DISCLAIMER

    a. The original collector of the Research Data, NDACAN, Cornell University, and the agency that funded the research bear no responsibility for use of the data or for interpretations or inferences based upon such uses.

VII. VIOLATIONS OF THIS AGREEMENT

    a. If NDACAN determines that the terms of use may have been violated, NDACAN will inform the Investigator of the allegations in writing and will provide an opportunity for a written response within 10 days. Sanctions for violating the License may include the following:

        i. NDACAN may revoke the existing Agreement, demand return of the Research Data, and deny all future access to NDACAN data.

        ii. The violation may be reported to the Investigator's institution and to the Investigator's funding agency with a request for an investigation.

        iii.

        iv. If the confidentiality of Research Subjects has been violated, the case may be reported to the Federal Office for Human Research

Protections, which may result in an investigation of the user's institution.

v.  A court may award the payment of damages to any individuals or organizations harmed by the breach of the Agreement.

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