Fall 2023

The Impact of Mandatory Substance Abuse Counselor Reporting Requirements on Child Maltreatment Reporting Outcomes

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THE IMPACT OF MANDATORY SUBSTANCE ABUSE COUNSELOR REPORTING REQUIREMENTS ON CHILD MALTREATMENT REPORTING OUTCOMES

by

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A Dissertation Submitted to the Faculties of
Eastern Virginia Medical School
Norfolk State University
Old Dominion University
in Partial Fulfillment of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

CLINICAL PSYCHOLOGY

VIRGINIA CONSORTIUM PROGRAM IN CLINICAL PSYCHOLOGY
December 2023

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ABSTRACT

THE IMPACT OF MANDATORY SUBSTANCE ABUSE COUNSELOR REPORTING REQUIREMENTS ON CHILD MALTREATMENT REPORTING OUTCOMES

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The present study sought to examine how state-level mandatory reporting policies are associated with child maltreatment reporting through analysis of the National Data Archive on Child Abuse and Neglect (NDACAN, 2021). This study aimed: 1) to examine how the implementation of substance abuse counselor reporting requirements is associated with the reporting process, including the disposition of reports and the presence of substance abuse; and 2) to examine differences in the above outcomes based on associations between non-specific reporting requirements and specific requirements that mention substance use counselors.

A quasi-experimental approach with repeated cross-sectional data was utilized, as it is a common analytic method in research involving larger, administrative and policy outcomes based on the difference-in-differences technique, whereby exposure to a policy change is evaluated by comparing pre- and post-implementation differences in an outcome for policy groups to those for nonpolicy comparison groups. Results of multivariate logistic regression analyses did not indicate a significantly higher proportion of substantiated or indicated CPS reports (*OR*= 1.07, 95% CI [.189, 6.14]) or those involving substance abuse (*OR*= 1.13, 95% CI [.737, 1.74]) when and, in the states, where substance abuse counselors are mandated to report suspected child maltreatment. Results and limitations could aid in informing future policy and mandatory reporting efforts.

DEDICATION

This dissertation is dedicated to all those impacted by child abuse and neglect – in particular, the incredibly brave kiddoes, adolescents, and supportive caregivers that I've had the privilege of working with during my clinical training, and those professionals committed to the identification, prevention, and efficacious treatment of child maltreatment.

ACKNOWLEDGEMENTS

I would like to extend my deep gratitude to the great minds that generously contributed their time, guidance, support, and relevant areas of expertise to this dissertation project. More specifically, to my research mentor and dissertation committee, Dr. Kelli England, Dr. Michelle Kelley, and Dr. James Paulson for their time and constructive feedback. Further, Dr. England for her modeling the enigmatic qualities necessary to become the distinguished expert and pioneer in her interdisciplinary field. I would also like to acknowledge former dissertation committee member and econometrician, Dr. Andrew Plunk for his willingness to apply for our NCANDS child file data, and great support with preparing and aggregating CPS report and policy data. Of note, the concept of this project originated through working with the resilient survivors of child abuse and under the great supervision of Dr. Kristina Golden and the entire multidisciplinary team within the Children's Hospital of The King's Daughters, Child Advocacy Center (CAC). I would also like to thank my loved ones and peers, whose support and mentorship, have been a consistent source of strength, influence, and privilege throughout my graduate training. Specifically, Alison, Ann, Emily, Eva, Holly, Jazzlin, Neslihan, Senem and Vivian. Along with Drs. Brokenberry, Hacker, Judah, Lewis, Macchia, Myers, Rodriguez, Taylor, Yilmaz, and Yoder. I'm grateful for having had the opportunity to work, learn, and grow alongside each of you and am proud of the exquisite human beings that you are. Among many things, I am grateful for my loved ones fostering in me their deep-rooted advocacy, curiosity, and passion for knowledge and getting into some good trouble, a la Congressman John Lewis. Thank you very much for your contribution to me realizing my personal and professional goals.

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CHAPTER I

INTRODUCTION

Child maltreatment is a complex and pervasive problem that encompasses physical abuse, psychological abuse, sexual abuse, and neglect (Schroeder et al., 2012). Legally, the Child Abuse Prevention and Treatment Act (CAPTA), (42 U.S.C. §5101), as amended by the CAPTA Reauthorization Act of 2010 (P.L.111–320), defines child abuse and neglect as, at a minimum, an act or failure to act on behalf of a parent or caretaker that either presents an imminent risk of harm or results in significant physical or emotional harm, sexual abuse or exploitation, or death (U.S. Department of Health and Human Services [USDHHS], 2015). According to the U.S. Department of Health and Human Services (USDHHS, 2021), 4.4 million (4,378,000) total referrals and 2.4 million (2,368,325) screened-in referrals, comprising approximately 7.9 million children, across U.S. Child Protective Services (CPS) agencies were received in 2019 for further evaluation of possible abuse or neglect. Of those referred nationally, 656,000 U.S. children were confirmed to be victim to child abuse and neglect, with approximately 170,923 cases involving drugs or alcohol. Further, approximately 44,595 or 6.8 % of children reportedly experienced "other" types of maltreatment, such as parent or caregiver drug or alcohol abuse, threatened abuse, or safe relinquishment of a newborn (USDHHS, 2017, 2021). Research indicates that alcohol or drug use among perpetrators is present in 40 to 70 percent of all maltreatment cases (Markowitz et al., 2010; USDHHS, 2015, 2018). Further, current federal statistics reflect that as of 2019, 5.8 percent of national child fatalities had a caregiver with a risk factor of alcohol abuse and 19.4 percent of child fatalities had a caregiver with a risk factor of drug abuse (USDHHS, 2021). Because substance abuse is common in cases of maltreatment, federal and state-level

policies which affect substance consumption by means of influence over monetary factors (e.g., alcohol excise tax) are negatively associated with child abuse and neglect (Markowitz & Grossman, 1998, 2000; Markowitz et al., 2010; Xu & Chaloupka, 2011).

The Department of Health, Education, and Welfare (1963) implemented child maltreatment reporting statutes that mandate reporting of suspected child abuse and neglect to prevent and reduce child maltreatment in the U.S. This led to the origination of CAPTA, enacted in 1974 (42 U.S.C. §5101), which is the key federal legislation addressing child abuse and neglect, and is responsible for providing federal funding of child maltreatment prevention, assessment, investigation, prosecution, and treatment, and stipulates child maltreatment reporting statutes in the U.S. Reporting policies are associated with increased detection of child maltreatment; however, universal mandated reporting in the absence of training has been linked to overreporting of suspected abuse and neglect and a rise in unsubstantiated reports (Mathews, 2014; Regis, 2012; Wallace et al., 2007).

As of 2016, the Child Welfare Information Gateway (CWIG), published by the U.S. Department of Health and Human Services, reported that all U.S. states and territories have statutes identifying persons who are legally required to report suspected child maltreatment to CPS, or an associated agency, such as state toll-free child abuse reporting hotlines. Forty-eight states require persons in most health professions to report suspected child abuse and neglect to CPS agencies, which make up approximately 68.6% of all maltreatment reports and contribute to improved reporting outcomes (USDHHS, 2015, 2021). Notably, despite substance abuse being commonly implicated in cases of child maltreatment, only 14 state statutes specifically require substance abuse counselors to report suspected abuse and neglect (CWIG, 2016d, 2020). Despite these requirements, the impact of state statutes requiring professionals to report has not been

replicated in recent years. Research examining the mandates for substance abuse counselor reporting is absent to our knowledge, and greatly needed.

Using available archival (2000-2016) data from the National Data Archive on Child Abuse and Neglect (NDACAN), the proposed study investigated the longer-term impact of substance abuse counselor reporting requirements using child maltreatment reporting data to examine the association between the implementation of mandated reporting requirements and child maltreatment outcomes between the years 2000 to 2016. Specifically, the association between the implementation of substance abuse counselor reporting requirements and child maltreatment reporting outcomes, including the disposition of child maltreatment reports and the presence of substance abuse (i.e., alcohol or drug use), and substance abuse services were examined. We also examined any differences in the above outcomes based on the implementation of non-specific reporting requirements versus requirements that mention substance abuse counselors specifically. Between-state differences in factors known to influence substance abuse and which could plausibly affect child maltreatment (e.g., alcohol and drug policies, such as excise taxes), were also controlled for to gain a complete picture of other possible associations.

It was expected that differences in the proportion of substantiated or indicated CPS reports, cases involving substance abuse and substance abuse-related services, would vary based on the implementation of state-level mandatory reporting requirements over time. If a greater proportion of substantiated or indicated CPS reports were found among those states in which substance abuse counselors are mandated to report suspected child abuse or neglect, this finding would point to a potential benefit of requiring such professionals to report and could inform policy efficacy. This document begins with a review of literature on child maltreatment

prevalence and history within the U.S., followed by a review of relevant federal and state policies affecting maltreatment, including the National Child Abuse and Neglect Data System (NCANDS), and a discussion of maltreatment reporting outcomes. Finally, a description of the specific aims and hypotheses of the present study are discussed.

Child Maltreatment Prevalence and Impact

Child maltreatment impacts an estimated 38% of children in the United States and broadly pertains to various forms of child abuse and neglect (Kim et al., 2017). The U.S. Department of Health and Human Services reported that out of the nationally estimated 656,000 children confirmed victims of child abuse and neglect in 2019, 74.9% or 506,802 were neglected, 17.5% or 115,100 were physically abused, and 9.3% or 61,804 were sexually abused and/or trafficked (USDHHS, 2017, 2021). In addition, 6.8% of victims experienced "other" types of maltreatment, such as parent or caregiver drug or alcohol abuse, or threatened abuse (USDHHS, 2021). It is likely, however, that the actual percentage is much greater, as national rates of substantiated and indicated reports are thought to drastically underestimate the number of U.S. children who experience child abuse and neglect (Wildeman et al., 2014). Most (84.5%) of victimized children reported to CPS in 2019 experienced a single type of maltreatment, but 15.5% experienced polyvictimization, or two or more maltreatment types (USDHHS, 2021). Perpetrators are often someone familiar or in close physical proximity to either the child or family (RAINN, 2018a), with the majority (91.4%) being one or more parents or caretakers of their victims (USDHHS, 2017, 2020). According to national estimates from NCANDS, the number of victimized children who received a CPS investigation increased by 9.0 percent from 2011 to 2015, and 5.8 percent from 2015 to 2019, which may be partially attributed to better and more accurate reporting (USDHHS, 2016, 2017, 2021).

Child maltreatment has a devastating impact on psychosocial, developmental, and long-term functioning, with evidence suggesting that abuse and neglect in childhood may be a risk factor for future psychopathology (Cash & Smolak, 2011; Centers for Disease Control and Prevention [CDC], 2012; Dansky et al., 1997). General psychological distress, trauma, depression, anxiety, personality disorders, and maladaptive behaviors including high-risk sexual behavior, substance abuse, eating disorders, and somatization have all been found to be possible long-term outcomes (see Polusny & Follette, 1995, for a review). Child abuse and neglect are also associated with significantly more frequent impulsive behaviors and maladaptive coping strategies, including engaging in health-risk behaviors (Corstorphine et al., 2007; Kerig, 2017). Among the numerous deleterious effects of such behaviors are a greater risk of problematic drinking and drug use in adolescence and adulthood (Ullman, Relyea, Peter-Hagene, & Vasquez, 2013). Notably, interpersonal traumas, including emotional, physical, and sexual abuse can predict substance use, and abuse severity have been associated with symptoms of posttraumatic stress disorder and related comorbidities, such as substance use disorders (Ehring & Quack, 2010; Green et al., 2000; Ullman et al., 2013). Such health-risk behaviors are also associated with a greater chance of revictimization in adulthood (Chaplo, Kerig, Bennett, & Modrowski, 2015; Polusny & Follette, 1995; Ports, Ford, & Merrick, 2016; Whitfield, 1998).

The Adverse Childhood Experiences (ACE) Study, which was a collaborative effort between the Centers for Disease Control and Prevention and healthcare provider Kaiser Permanente, remains one of the largest and most comprehensive investigations of the long-term effects of childhood maltreatment in the United States (Brown et al., 2009; Felitti et al., 1998). The ACE Study aimed to address the scientific gap in understanding the origins of health-risk behaviors and negative health outcomes and demonstrated a graded dose-response relationship

between adverse childhood experiences and negative health (e.g., ischemic heart disease) and well-being outcomes (e.g., drug abuse; depression) (Felitti et al., 1998). ACE indicated that as cumulative childhood stress from child abuse or neglect increases, the intensity of negative health outcomes also increases. This conceptual framework is represented by the ACE Pyramid (CDC, 2012), which illustrates the increased risk that stressful and traumatic childhood experiences have on subsequent behavioral, cognitive, health, and psychosocial problems. Specifically, the ACE framework posits two broad mechanisms in which adverse childhood experiences may lead to long-term consequences and conceptualizes disease as either a delayed consequence to maladaptive coping mechanisms or disease caused by chronic, elevated stress and cortisol levels (Felitti, 2009). For instance, a history of childhood abuse or neglect may be linked to increased depression and anxiety, which may manifest in overeating and substance abuse, which in turn may heighten the risk of coronary artery disease, pancreatitis, and premature death (Dube et al., 2009; Felitti, 2009; Ford et al., 2011). See Figure 1.

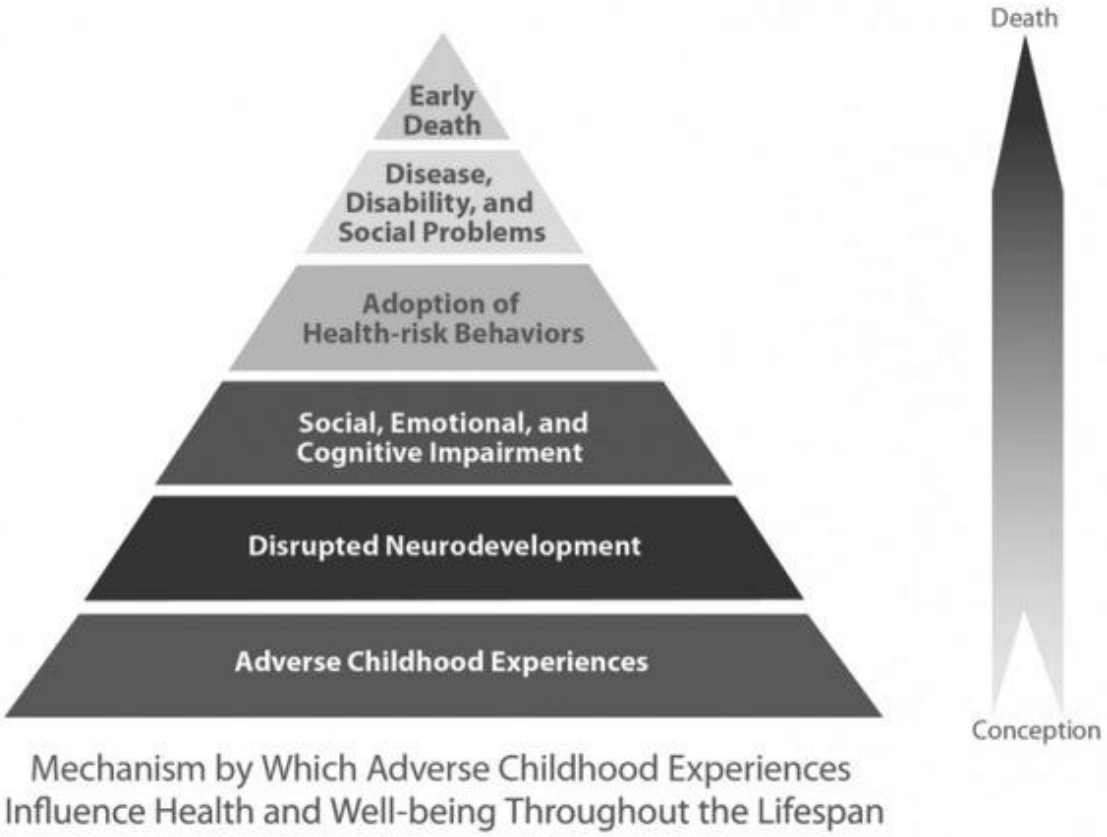

Figure 1. Adverse Childhood Experiences (ACE) Conceptual Framework. From Centers for Disease Control and Prevention. (2012). Retrieved from http://www.cdc.gov/ace/.

Similarly, researchers have proposed mechanisms specifically pertaining to the longstanding association between substance abuse disorders frequently diagnosed among individuals with histories of abuse and neglect (Kerig, 2017; Stewart et al., 1998). According to Khantzian's (1997, 2003) self-medication hypothesis (SMH), abusing substances may serve as a compensatory mechanism to regulate or manage overwhelming emotions and negative affect (Suh et al., 2008). Khantzian (1997) views substance abuse from the lens of a self-regulation disorder, in which individuals self-medicate due to their difficulty to regulate their own emotions or emotional expression, and feelings towards themselves or others, which is significantly more likely following a traumatic event, such as experiencing child abuse or neglect. In the context of maltreatment, an example could be abusing drugs with sedating and pain-relieving properties following a nightmare or flashback of a sexual assault that took place in childhood, to reduce the fear and emotion of the images and be able to fall back asleep. From this vantage, SMH is a coping strategy that although reinforced in the short-term, is typically associated with poorer long-term treatment outcomes in survivors and maintains symptoms through avoiding trauma reminders (Blume, Schmaling, & Marlatt, 2000; Frazier, Mortensen, & Steward, 2005; Suh et al., 2008; Ullman & Najdowski, 2009).

It is evident that primary prevention and early intervention of child abuse and neglect is important, given their prevalence, comorbidity, and being significant risk factors for a multitude of negative outcomes (Brown et al., 2009; Cohen, Mannarino, & Deblinger, 2017; Dube et al., 2009; Felitti et al., 1998). Early identification and effective intervention in the aftermath of child maltreatment may contribute to forestalling or minimization of such potential risk. Further, given the devastating consequences of such abuse and neglect, increased efforts to accurately gauge how often child maltreatment occurs are invaluable. Despite the increase in substantiated child

maltreatment reports, suspected child abuse and neglect remains considerably underreported (Finkelhor et al., 2009; Mathews, Lee, & Norman, 2016; Stoltenborgh et al., 2015). This study aimed to partially address this problem by using the most comprehensive data system of child abuse and neglect available through NCANDS and Cornell University, to examine the impact that mandating substance abuse counselors to report suspected child maltreatment has on reporting outcomes, such as CPS report substantiation.

Substance Abuse Among Perpetrators

The relationship between parents or caretakers who engage in substance abuse and child maltreatment is well established (Magura & Laudet, 1996; Neger & Prinz, 2015; Steenrod & Mirick, 2017). Among the numerous negative effects of parental or caregiver substance abuse is the impact that it has on child development and well-being (Kelley et al., 2015; Kelley et al., 2007; Beesley & Stoltenberg, 2002). In a comprehensive study involving approximately 8,000 participants, those who reported having at least one parent who abused alcohol were twice as likely to have experienced abuse or neglect during childhood, as compared to those whose parents did not abuse alcohol (Dube et al., 2009; Neger & Prinz, 2015). Like sequelae of childhood maltreatment, caregiver substance abuse is associated with children's increased risk for psychopathology (e.g., Major Depressive Disorder), maladaptive coping behaviors, such as substance abuse, and physiological disturbances, such as seizures (Barnard & McKeganey, 2004; Lo, Chan, & Ip, 2017; Pajulo et al., 2006; Ritter et al., 2002).

The co-occurrence of maladaptive parenting and parental substance abuse is a widely recognized phenomenon that is known to contribute to the risk of child maltreatment (Neger & Prinz, 2015). The CDC and Children's Bureau further corroborate the notable risk that substance abuse places on children, as caregiver alcohol and drug use are designated risk factors that are

identified by NCANDS, irrespective of whether the caregiver is the alleged perpetrator (CDC, 2008; USDHHS, 2015). Specifically, parents or caregivers who abuse drugs or alcohol are more likely to engage in parenting techniques that are known to be either problematic or ineffective, such as providing minimal supervision, and often adopt more authoritarian or harsh parenting styles (Kelley et al., 2015; Miller, Smyth, & Mudar, 1999; Neger & Prinz, 2015; Staton-Tindall et al., 2013). These ineffective techniques, such as corporal punishment, are disproportionately present in such caregivers and contribute to increased risk for child maltreatment (Dube et al., 2009; Kelley et al., 2015; Neger & Prinz, 2015). Khantzian's (1997, 2003) SMH is also relevant to caregiver substance abuse, as heightened psychological distress and negative affect often underlie excessive use of drugs and alcohol, and are correlated with harsher parenting styles (Maduro, 2016; Moreland & McRae-Clark, 2019; Neger & Prinz, 2015). To account for the notable contribution of substance abuse to child maltreatment, the present study examined substance abuse as it relates to CPS reports involving caregiver alcohol or drug abuse, and in which substance abuse-related services, such as mandated individual substance use counseling and treatment groups, were provided.

Child Maltreatment History

The victimization of children as a public health issue was first described in the U.S. as "The Battered-Child Syndrome" by Kempe and colleagues (Kempe et al., 1962). This syndrome was defined as a clinical condition among children who have received serious physical abuse from their parents or caregivers (Kempe et al., 1962; Kempe et al., 1985, 2013). Kempe and his colleagues' work are credited with being the first to define and bring academic and public attention to the issue of child maltreatment and has since been expanded to sexual abuse, emotional abuse, and neglect (Kempe et al., 2013). Kempe received a Nobel Prize for his

contribution to the prevention and treatment of child abuse and neglect and his efforts contributed to the creation of mandatory reporting statutes in the U.S. (Kempe et al., 2013). However, due to the primary focus on severe physical abuse among children seen in clinical settings, and lack of specificity of what constitutes abuse, his research also resulted in inconsistent preliminary efforts across states and disciplines to define and measure abuse and neglect (Cawson et al., 2000). Following Kempe's efforts, various disciplines, including public health, medicine, law, psychology, and social work, utilized their own definitions of abuse and neglect before the implementation of CAPTA. Despite their likely intent, specification of definitions across fields significantly limited the ability to meaningfully track the prevalence and impact of childhood maltreatment and monitor the efficacy and effectiveness of prevention and intervention efforts (CDC, 2002).

Theoretical definitions of child abuse and neglect. Consistent definitions and measures of childhood maltreatment are vital, as accurate calculations of victimization are dependent on how these terms are defined and operationalized. Inconsistencies across disciplines are longstanding and continue currently, as theoretical, and legal definitions of child maltreatment often vary (CWIG, 2016a, 2020). Theoretical definitions of such constructs are preferred, as they are typically based on prior research, whereas legal definitions are not usually grounded in sound scientific theory and therefore do not have the same reliability and validity (Graham et al., 2018; Steenrod & Mirick, 2016). However, these definitions cannot be bypassed, since the present study aimed to analyze outcomes informed by federal and state policy that are based on legal definitions of child abuse and neglect. We attempted to address these disparities by utilizing NCANDS, which uses federal definitions for all categorizations of reported abuse and neglect and allowed for comparisons across states. It is important to consider that legal definitions at the

state-level are often more detailed and dictate what is put into federal databases. Thus, careful examination of state-level differences in policy implementation is still important when using NCANDS data and was examined in the present study. For example, although emotional abuse is included in the federal definition of child maltreatment, Connecticut statute describes abuse as simply "including" emotional maltreatment (G.S. § 46b-120), whereas Colorado defines emotional abuse as an identifiable and substantial impairment or a substantial risk of impairment of the child's intellectual or psychological functioning or development (R.S. § 19-1-103). Theoretical definitions of child abuse and neglect followed by legal definitions are described below.

Emotional abuse. Emotional or psychological abuse can be broadly defined as episodic or continued intentional behavior on behalf of the caregiver or parent, which communicates to a child that they are endangered, flawed, unloved, unwanted, worthless, or useful only in meeting another's needs (CDC, 2008). Behaviors that constitute such abuse include belittling, corrupting, confining, degrading, exploiting, isolating, restraining, and terrorizing (Barnett, Manly, & Cicchetti, 1991; CDC, 2008; McGee & Wolfe, 1991). Emotional abuse involving isolation and terrorizing is recognized as being of utmost concern, as these could be life threatening and developmentally disparaging, respectively, to a child (CDC, 2008; Kairys & Johnson 2002).

Neglect. Neglect can be defined as an act of omission on behalf of a caregiver or parent to either provide for or supervise a child (Barnett et al., 1991; CDC, 2008). Specifically, these acts of omission may include threatening the health, safety, or wellbeing of a child due to failure on behalf of a parent or caregiver to provide a child with their basic needs, including clothing, shelter, sustenance, and medical care, or protect them from harm, including potential harm (CDC, 2018; CWIG, 2016a; Runyan, 2015).

Physical abuse. Physical abuse can be defined as using physical force intentionally towards a child or adolescent, which either results in, or has the potential to result in, physical injury, disfigurement, or death (CDC, 2008). Behaviors that constitute such abuse include a range of physical acts, including beating, biting, burning, choking, dropping, dragging, punching, pushing, poisoning, and shaking a child (Barnett et al., 1991; CDC, 2008). Physical injuries to the anal or genital area, or other surrounding areas, because of attempted or completed sexual abuse do not constitute physical abuse as they fall under the category of sexual abuse (Basile & Saltzman, 2002; CDC, 2008).

Sexual abuse. As children are unable to consent to sexual activity of any form, any sexual activity including minors can fall under the category of child sexual abuse (CDC, 2008). The nature of the sexual activity does not need to include physical contact (RAINN, 2018b). For example, fondling, obscene phone calls or digital messages, and exhibitionism can all be considered forms of CSA.

Legal definitions of child abuse and neglect. The CAPTA Reauthorization ACT (P.L. 111-320), defines child abuse and neglect as, at a minimum, an act or failure to act on behalf of a parent or caretaker that either presents an imminent risk of harm or results in significant physical or emotional harm, sexual abuse or exploitation, or death (P.L. 111-320). In consideration of the increased prevalence and awareness of human trafficking of minors in the United States, CAPTA was further amended by the Justice for Victims of Trafficking Act of 2015 (P.L. 114-22), which expanded the federal definition of sexual abuse to include children who are identified as victims of sex trafficking. Despite being a federal definition, currently, 21 states acknowledge this change and have expanded their definition to include this stipulation (CWIG, 2017; USDHHS, 2017).

Federal and State Legislation and Policies

The theory of triadic influence (TTI) highlights the interconnectivity between psychology, sociology, and public health (Flay, Snyder, & Petraitis, 2009), and provides a means of understanding the effects of legislation on health outcomes by combining relevant theories across disciplines (Burris et al., 2010; Flay et al., 2009). This theory is particularly relevant to childhood maltreatment, as federal laws and regulations provide guidance, structure, and funding regarding child welfare policies and practices, and U.S. states and territories are responsible for identifying and implementing their own specific child welfare systems (CWIG, 2017; Wagenaar & Burris, 2013).

Federal policies. The federal government's involvement with children's well-being began in 1912, upon the creation of the Children's Bureau that was established to guide federal aid to families and support state child welfare programs (CWIG, 2017). The Children's Bureau operates under the United States Department of Health and Human Services (USDHHS) within the Administration for Children and Families and is responsible for publishing the annual child maltreatment report using data from the National Child Abuse and Neglect Data System (USDHHS, 2016). The legal term *parens patriae* refers to the government's role in protecting those that are unable to protect themselves and is often applied to children or dependent adults when parents or caretakers fail to provide proper care (Gostin & Wiley, 2016; Pisciotta, 1982; Rendleman, 1971; Runyan, 2015). CAPTA, (42 U.S.C. §5101), as recently amended by the CAPTA Reauthorization Act of 2010 (P.L.111–320), the Justice for Victims of Trafficking Act of 2015 (P.L. 114-22), and the Comprehensive Addiction and Recovery Act of 2016 (P.L. 114-198), is the key federal legislation addressing child maltreatment in the U.S. (CWIG, 2017; Runyan, 2015; Steen & Duran, 2014).

Federal legislation is imperative to child welfare and protection service delivery in the United States and impacts child maltreatment in several ways. First, federal legislation informs several laws that significantly impact child welfare and state child protection services (CWIG, 2016b, 2017; USDHHS, 2017). Second, the federal government provides funding to those states that comply with designated federal requirements and guidelines, including grants to public agencies and nonprofit organizations, which is a major source of influence on state policy (CWIG, 2017; Runyan, 2015). Third, it informs uniform definitions and assessments of child abuse and neglect (Runyan, 2015; USDHHS, 2017). Fourth, federal legislation sets forth standards for data collection and dissemination (CWIG, 2017).

State-level policies. Although the influence that federal regulations have on state laws, or statutes, is robust, the longstanding influence of state-level policies on child maltreatment outcomes is also well established and an important consideration (Atkinson, Curnin, & Hanson, 2016; Mathews, 2015; Wagenaar & Burris, 2013). While compliance with federal guidelines is vital for states to receive adequate funding and resources to address child maltreatment, individual states and territories have the authority to adopt specific policies and definitions of child abuse and neglect that may vary from federal legislation (Krase & Delong-Hamilton, 2015). Key state-level policies that influence such outcomes include specific mandated reporting requirements, and alcohol and drug policies, given their purported impact on reporting outcomes and substance abuse, respectively (Atkinson et al., 2016; CWIG, 2017; McTavish et al., 2017). Included in state-level mandated reporting statutes and policies are definitions of child abuse and neglect, which CPS agencies use to determine a response to the alleged maltreatment upon receiving a report or complaint (Kenny, Marchena, Helpingstine, Abreu, & Lopez-Griman, 2017; USDHHS, 2016). These state statutes impact how CPS agencies respond to the safety needs of

children, as these statutes designate the level of evidence required for a report to be investigated, substantiated, or indicated and in which services be provided to children and families (Mathews, 2015; USDHHS, 2016). Due to the potential impact that these disparities can have on federal database reports of child maltreatment, NCANDS requires states to convert data into a standardized coding form to safeguard data consistency and quality, allowing for comparison of data across states (USDHHS, 2016). However, it is important to consider that legal definitions at the state-level dictate what is put into federal databases. Thus, careful examination of state-level differences in policy is important when using NCANDS data and was considered in the current study.

Reporting practices and impact. Reporting suspected child abuse and neglect requires notifying CPS or associated agencies or individuals, which are mandated to notify CPS (Fang, Brown, Florence, & Mercy, 2012). Once the alleged child maltreatment is reported, CPS agencies utilize a two-step approach to responding to these referrals that consists of screening and investigation (Kenny et al., 2017; USDHHS, 2016, 2017). Specific screening requirements vary by state according to individual policy, though each state is required to report the number of screened referrals (USDHHS, 2016; CWIG, 2017). Each year in the U.S., approximately 60% of referrals continue to investigation after screening (USDHHS, 2016, 2017, 2021). Referrals that are screened out may be a result of CPS agencies determining that the report did not contain enough information to warrant an investigation, did not concern child abuse or neglect, the potential victim is older than 18 years of age, or the referral was more appropriate for another agency or jurisdiction, such as the military or Federal Bureau of Investigation (USDHHS, 2017, 2021). Screened referrals are likely to be most impacted by state-level definitions of child abuse and neglect, given variations in state informational requirements and definitions of child

maltreatment. The purpose of CPS investigations is to determine whether children are maltreated or at risk of being maltreated, according to legal (i.e., state-level, and federal) definitions of abuse and neglect, and to determine whether any services are needed (USDHHS, 2016, 2020).

Mandated reporting policies. Under the CAPTA enacted in 1974, all U.S. states have statutes requiring designated individuals to report suspected child abuse or neglect and requiring the investigation of such child abuse referrals through CPS agencies (CWIG, 2017; Kenny et al., 2017). Although federal legislation provides general guidelines for reporting practices, state legislation is responsible for ascribing specific guidelines to these policies (CWIG, 2008, 2009; Steen & Duran, 2014). All state statutes are required by CAPTA to provide information pertaining to state-level definitions of abuse and neglect, persons required to report, the severity of maltreatment that requires reporting, penalties for failure to report suspected maltreatment, when and to whom the referral must be made, details that should be included, and reporter confidentiality (USDHHS, 2020, 2021; Mathews, 2015).

Researchers have examined the impact of various federal and state-level policies for reporting suspected child maltreatment (Eckenrode et al., 1988; Fergusson, Horwood, & Woodward, 2000). Although there is evidence of higher reporting rates among states that require universal reporting, these policies are rarely systematically evaluated (Eldred & Gifford, 2016; Palusci & Vandervort, 2014; Palusci, Vandervort, & Lewis, 2016). In one such investigation using NCANDS data from 2000 to 2010, Palusci and colleagues (2016) found that child maltreatment reporting statutes were significantly associated with reporting rates, such that mandated reporting practices were associated with increases in the total number of referrals made to CPS, and substantiated or indicated reports. Other researchers have found similar results (CWIG, 2017, 2020; Eckenrode et al., 1988; Fang et al., 2012; Raissian et al., 2014). Although

the increases in referrals may lead to increased identification of child victims, increases can also lead to a substantial burden on CPS agencies and their resources (Fang et al., 2012; Mathews et al., 2016; Palusci et al., 2016).

There is evidence that professionals that are mandated to report, particularly among those who have adequate training on child abuse and neglect, are more likely to accurately identify cases of child maltreatment (Kenny et al., 2017; Starling et al., 2009). Perceived lack of knowledge regarding recognition of child abuse and neglect is identified as a significant barrier reported by health professionals to reporting suspected maltreatment (Pietrantonio et al., 2013). Despite this barrier, there are currently no federal statutes designating standards for training professionals mandated to report suspected child maltreatment (Kenny et al., 2017).

Some states may require Universal Mandated Reporting (UMR), in which all adults report suspected child abuse or neglect, whereas most states only require a variety of specific healthcare providers and other professionals that may interact closely with children and families to report (CWIG, 2020; Krase & DeLong-Hamilton, 2015; McElroy, 2012). Currently, 48 states require most health and other professionals to report suspected child abuse and neglect to CPS agencies, and among those, 18 states and 1 U.S. territory have UMR requirements in place (CWIG, 2020; McElroy, 2012; USDHHS, 2015). Among the states requiring health and other professionals to report suspected maltreatment, 14 states specifically require substance abuse counselors to report (CWIG, 2016c). See Table 1 for the year of mandated substance abuse counselor reporting implementation for each state. It should be noted that many states have general requirements pertaining to substance abuse counselors that do not necessarily specify substance abuse counselors, such as UMR or statutes designating mental health practitioners to report suspected child maltreatment. See Table 2 for the year of mandated reporting

implementation for all health professionals. There is currently no known research investigating the efficacy of requiring substance abuse counselors to report. In consideration of the notable risk that caretaker and parental substance abuse presents for child maltreatment and the paucity of research evaluating the efficacy of mandating substance abuse counselors to report suspected maltreatment, the primary intent of the present study was to examine the association between substance abuse counselors and child maltreatment reporting outcomes.

Table 1

Effective year of mandated state substance abuse counselor reporting implementation

State	Effective Year
Wisconsin	1983
Connecticut	1988
Alaska	1990
New York	1994
Nevada	1999
Iowa	2002
Oregon	2004
Illinois	2005
South Dakota	2005
Kansas	2006
North Dakota	2007
California	2008
Massachusetts	2008
South Carolina	2008

Note. Based on the work of Child Welfare Information Gateway (2016c) and publicly accessible primary source statutes by state.

Table 2

Effective year of state-mandated reporting for all health professionals

State	Effective Year
Arizona	1964
South Dakota	1964
Washington	1965
Alaska	1971
Delaware	1971
Wyoming	1971
District of Columbia	1973
Tennessee	1973
New York	1973
New Jersey	1974
Montana	1974
Alabama	1975
Michigan	1975
Minnesota	1975
Missouri	1975
North Dakota	1975
Oklahoma	1975
Idaho	1976
Rhode Island	1976
Nebraska	1977
Wisconsin	1977
New Mexico	1978
New Hampshire	1979
North Carolina	1979
Iowa	1983
Maryland	1984
Illinois	1985
Nevada	1985
Colorado	1986
Kentucky	1986
California	1987
Hawaii	1989
Pennsylvania	1990
Louisiana	1991
Mississippi	1992
Vermont	1993
Oregon	1993
Virginia	1994
Connecticut	1997
Indiana	1997
Florida	1998
Georgia	1999
Maine	1999
Texas	1999
Utah	1999
Massachusetts	2002

Ohio	2004
Kansas	2006
South Carolina	2008
Arkansas	2010
West Virginia	2017

Note. Based on the work of Child Welfare Information Gateway (2016c) and publicly accessible primary source statutes by state.

Alcohol and drug policies. The well-established association between parent or caregiver alcohol abuse and child maltreatment highlights the impact of alcohol policies, such as beer, wine, or liquor excise taxes on reducing instances of child abuse and neglect (Markowitz & Grossman, 1998, 2000; Xu & Chaloupka, 2011). Trends in U.S. federal and state alcoholic beverage taxes and prices have notable impacts on alcohol consumption and its related consequences (Xu & Chaloupka, 2011). Thus, given the relationship between alcohol consumption and child maltreatment, higher excise taxes on alcohol may also be effective in reducing the incidence of child maltreatment (Markowitz et al., 2010; Markowitz & Grossman, 1998, 2000; Xu & Chaloupka, 2011). Specifically, research has indicated an inverse relationship between alcohol taxes and alcohol consumption (Markowitz et al., 2010). Research has similarly indicated an inverse relationship between tobacco excise taxes and nicotine consumption (Grucza et al., 2015). Additionally, U.S. states that adopt higher tobacco excise taxes are often associated with increased likelihood of promoting health and drug prevention funding and adopting a progressive political leaning (Grucza et al., 2015; Hall & Weier, 2015).

While decriminalization and legalization of cannabis are not known to be associated with increased use or harm, there is evidence suggesting that such policies increase availability, and that survivors and perpetrators of childhood maltreatment are at increased risk of abusing a variety of substances (Afifi, Henrikson, Asmundson, & Sareen, 2012; Grucza et al., 2015; Hall & Weier, 2015). The efficacy of workplace drug testing on substance abuse is similarly limited, though policy research indicates an inverse relationship between workplace drug testing and drug use, suggesting a potential impact of such policies on decreasing substance abuse (French, Roebuck, & Alexandre, 2004; Pidd & Roche, 2014). Due to the potential impact of alcohol and drug policies, the present study accounted for state-level differences in alcohol and tobacco

excise taxes among the study sample, in addition to other factors known to impact substance abuse, such as mental health funding, by including them as covariates in analyses. It should be noted that cannabis policies and workplace drug testing were not included due to significant variability surrounding definitions and reporting of both statutes.

Child Maltreatment Surveillance

Large-scale, longitudinal, and comparable data are necessary to understand and address key issues pertaining to child maltreatment surveillance, prevention, and intervention (Kenny et al., 2017). Such data can inform programs, policies, and procedures by means of providing empirical assessment of risk factors and outcomes of child abuse and neglect (Brownell & Jutte, 2013; MacMillan et al., 2007). The scarce availability of such large-scale data has been identified as a challenge to empirical research involving child abuse and neglect (Wagenaar & Burris, 2013). Specifically, acquiring maltreatment prevalence and outcome data is difficult, and often quite time-consuming and expensive (Brownell & Jutte, 2013; Fang et al., 2012). Administrative data have been used for several decades to combat this challenge, particularly as it relates to child welfare research and policy formulation and evaluation (American Psychological Association [APA], 1979; Brownell & Jutte, 2013; English, Brandford, & Coghlan, 2000; Johnson-Reid & Drake, 2008). Administrative databases (ADBs) pertain to agency records that are routinely collected and are a necessary component of surveillance and policy development and evaluation (Johnson-Reid & Drake, 2008; Roos & Shapiro, 1999). Such databases, including legal and maltreatment data, often from CPS agencies, provide an important opportunity for child maltreatment prevention and intervention, as they provide an extensive, cost-effective, and systematic way in which to monitor reported child abuse and neglect (Brownell & Jutte, 2013; Johnson-Reid & Drake, 2008; Yampolskaya & Banks, 2006).

The impetus for such data collection was the 1986 Title IV-E Social Security Act, which mandated the establishment of the Adoptions and Foster Care Analysis and Reporting System (AFCARS), followed by the 1993 Omnibus Reconciliation Act (P.L. 103-66) in which Statewide Automated Child Welfare Information Systems (SACWIS) were incentivized by the federal government in the form of funding (Brownell & Jutte, 2013; English et al., 2000; NCANDS, 1993). SACWIS requirements are now met by the National Child Abuse and Neglect Data System, which aligns with federal efforts to develop outcome and accountability measures for child abuse and neglect (Courtney & Collins, 1994; English et al., 2000; USDHHS, 2017).

The National Child Abuse and Neglect Data System (NCANDS). The National Child Abuse and Neglect Data System is a federally sponsored effort informed by CAPTA that was established by the Children's Bureau in 1988 as a national database for child abuse and neglect records to encourage scholars to use existing child maltreatment data in their research (USDHHS, 2017). Annual data collection efforts commenced in 1991 from Child Protection Services agencies across the U.S., and these data are analyzed each year to produce publicly accessible Child Maltreatment Reports (Palusci et al., 2016; USDHHS 2002, 2004, 2006, 2008, 2017). All 50 U.S. states, the District of Columbia, and Puerto Rico submit to NCANDS each reporting year (USDHHS, 2014). The NCANDS reporting year is based on the federal fiscal year (FFY), which spans from October 1 through September 30 of the following year. The NCANDS Child File represents a census of all CPS investigations or assessments conducted in the states and territories that participate in the NCANDS. For FFY 2016, the dataset consists of 4,191,742 records, or report-child pairs (USDHHS, 2016). The proposed study incorporated all available NCANDS data from 2000 to 2016 for statistical analysis of aims and hypotheses. Datasets from

2017 to 2020 were not requested, as these were not considered to make a significant impact on results and were made available to researchers by NCANDS after the proposal date.

Dispositions for investigation responses. Child maltreatment reporting outcomes, otherwise known as dispositions, are a direct result of investigations completed by CPS (USDHHS, 2017). Although there are nuanced determinations that vary by state the most prevalent determinations (see Table 2), are either *substantiated*, whereby the suspected abuse was supported, *unsubstantiated*, whereby evidence was not sufficient to support suspected abuse, or *indicated*, whereby there is not sufficient support of abuse but there is reason to suspect child maltreatment (USDHHS, 2016). In NCANDS, a victim of child maltreatment is defined as a child whose associated report received a disposition of either substantied or indicated by CPS (USDHHS, 2017). Based on this definition, out of the 4.1 million cases reported to CPS in 2015, for suspected child maltreatment, 16.7% received substantied dispositions, 0.7% received indicated dispositions, and the remaining 83.3% were not determined to be victims or received an alternative response (USDHHS, 2017). Disposition for investigation responses lend insight into the impact of state statutes, as they can inform whether mandatory reporting statutes contribute to improved reporting outcomes and contribute to more accurate prevalence estimates. Specifically, improved reporting outcomes are defined by an increase in substantiated or indicated CPS reports over time, as they communicate the confirmation of child abuse or neglect following a thorough CPS investigation (CWIG, 2016b, 2020).

Table 3

Outcomes for Child Maltreatment Reports in the National Child Abuse and Neglect Data System

Disposition	Definition
Substantiated	1. Alleged maltreatment was supported or founded by state law or policy
Unsubstantiated	2. Not sufficient evidence under state law to conclude or suspect child maltreatment
Indicated	3. Not sufficient evidence to substantiate, though reason to suspect that at least one child was maltreated or at risk of maltreatment
Intentionally False	4. Person who made the allegation of maltreatment knew that it was not true
Closed with No Finding	5. CPS response could not be completed. Often assigned when alleged victim cannot be located
Other	6. If none of the above is applicable, and when the results of an investigation are uncertain, inconclusive, or unable to be determined
Alternative Response	7. Provision of a non-investigative response that determines if a child or family needs services. Determinations of maltreatment are not made, and perpetrators are not determined

The Current Study

Mandated reports on behalf of health professionals make up a significant portion of all maltreatment reports (USDHHS, 2015) and contribute to increased substantiation of these reports as compared to nonprofessionals (Eckenrode et al., 1988; Kahn, Gupta-Kagan, & Hansen, 2017; Kesner, Bingham, & Kwon, 2009). The current study aimed to contribute to the existing body of research on child maltreatment reporting outcomes and mandatory reporting policies in several ways. First, the longer-term impact of substance abuse counselor reporting requirements on child maltreatment outcomes was investigated by examining the association between the timing of the implementation of mandated reporting requirements and the outcome of CPS reports. Relevant literature suggests that mandated reporting leads to more reports and thus requires greater resources to be put toward CPS investigations into whether reports are substantiated or unsubstantiated, though the majority of research focuses on differences between professionals and nonprofessionals mandated to report suspected child abuse and neglect and typically does not account for the timing of policy change and implementation (Krase & Delong-Hamilton, 2015; McElroy, 2012). The current study accounted for this absence by focusing on the timing of policy implementation and change among those states requiring substance abuse counselors to report to examine the average change associated with implementing the policy in each U.S. state between 2000 to 2016. Further, time and state invariant factors known to influence consumption (e.g., alcohol and tobacco policies), were controlled for.

The current study also examined potential between-state differences based on the implementation of non-specific reporting requirements vs. the implementation of requirements that mention substance use counselors specifically. It was expected that child maltreatment reporting outcomes (i.e., dispositions, substance abuse, and substance abuse-related services)

would vary based on the timing of state-level mandatory reporting requirements. Hypotheses were based on existing research demonstrating the positive impact of mandated health professional reporters on the integrity of the reporting process (King, Reece, Bendel, & Patel, 1998; Krase & Delong-Hamilton, 2015). To account for varying definitions of child maltreatment across states, the present study utilized child maltreatment type categorizations in NCANDS, which are based on federal guidelines for evidence of one or more instances of abuse (i.e., emotional, physical, sexual) and neglect (i.e., emotional, physical, medical) (Paulsci, Vandervort, & Lewis, 2016; USDHHS, 2002). Because NCANDS federal guidelines cannot account for all variation in state-level interpretations and definitions of child abuse and neglect, state-level differences were noted. To our knowledge, no current studies have focused on the effects of implementing reporting policies among mandated substance abuse counselors. If supported, findings that demonstrate the positive impact that mandatory reporting requirements have on important CPS reporting outcomes could aid in prevention and reduction efforts by informing future policy related to requiring such professionals to report, and for reducing risk of child maltreatment reoccurrences among families known to CPS.

Specific aims and hypotheses are as follows:

Aim 1: Examine the impact of reporting for substance abuse counselors within the 14 U.S. states that have implemented these policies.

Hypothesis 1a: The timing of the implementation of mandatory reporting requirements for substance abuse counselors would be associated with increased likelihood of child maltreatment report substantiation or indication.

Hypothesis 1b*:* The timing of the implementation of mandatory reporting requirements for substance abuse counselors within a state would be associated with increased likelihood of a report involving substance abuse.

Hypothesis 1c: The timing of the implementation of mandatory reporting requirements for substance abuse counselors within a state would be associated with increased likelihood of a report involving substance abuse services.

Aim 2: Examine the impact of non-specific reporting requirements vs. the implementation of requirements that mention substance abuse counselors specifically.

Hypothesis 2a: The timing of the implementation of mandatory reporting requirements for any health professionals within a state would be associated with increased likelihood of a report being substantiated or indicated.

Hypothesis 2b: The timing of the implementation of mandatory reporting requirements for any health professionals within a state would be associated with increased likelihood of a report involving substance abuse.

Hypothesis 2c: The timing of the implementation of mandatory reporting requirements for any health professionals within a state would be associated with increased likelihood of a report involving substance abuse services.

CHAPTER II

METHOD

Source Data

The present study utilized existing administrative data. Specifically, the study incorporated all available archival NCANDS child file datasets spanning from 2000 to 2016. These data were obtained from the National Data Archive on Child Abuse and Neglect at Cornell University, which serves as a repository storing NCANDS' Child Files and Agency Files and granting researchers licenses to acquire these data for statistical analyses and included information from all child maltreatment reports filed to CPS in the United States (USDHHS, 2017). All 50 U.S. states and territories are required to submit to NCANDS each reporting year (USDHHS, 2016). As such, aggregated and de-identified child maltreatment reports collected by NCANDS, rather than individual participants, served as the sample.

A repeated, cross-sectional report-level dataset was created using the raw child-level data provided by NCANDS and then linked to state-level policy variables. The final compiled dataset contained several variables of interest aggregated at the report-level, including child maltreatment reporting outcomes, such as substantiated or indicated dispositions rendered by CPS, substance abuse, and substance abuse-related services, and potential covariates, such as caretaker risk factors, demographic information, and the length of the reporting process. The final dataset additionally complies with NCANDS' data use agreement. No individuals could be identified using the final, aggregated, report-level dataset. Further, the Institutional Review Board at Eastern Virginia Medical School approved the current study and access to NCANDS child file datasets. Report-level and demographic characteristics for the final sample (N = 55,416,398) are included in Tables 4 and 5.

Table 4

Report-Level Characteristics of Final Sample (*N* = 55,416,398)

CPS Report Descriptor	*n*	%
Outcomes		
Substantiated or Indicated	14,024,082	25.3
Child Risk Factors		
Prior Victim	16,790,606	30.3
Alcohol or Drug Abuse	2,905,337	5.24
Behavioral Problems	581,023	1.05
Emotional Disturbance	1,198,083	2.16
Intellectual Disability	286,363	0.52
Learning Disability	581,023	1.05
CPS Services		
Substance Abuse Services	1,100,590	1.99
Mental Health Services	1,164,466	2.10
Juvenile Justice Services	92,601	0.17

Note. Based on the work of Child Welfare Information Gateway (2016c) and The National Child Abuse and Neglect Data System (NCANDS).

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Table 5

Demographic Characteristics of Final Caregiver Sample (*N* =55,416,398)

CPS Report Descriptor	*n*	%
Caregiver Risk Factors		
Prior Abuse	3,917,193	7.07
Alcohol or Drug Abuse	2,905,337	5.24
Domestic Violence	3,387,621	6.11
Intellectual Disability	176,682	0.32
Public Assistance	6,557,790	11.8

Note. Based on the work of Child Welfare Information Gateway (2016c) and The National Child Abuse and Neglect Data System (NCANDS).

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Variables and Covariates

Three outcome variables were constructed from the NCANDS child-file codebook (Appendix A): child maltreatment reporting dispositions, child maltreatment reports involving substance abuse, and reports involving substance abuse-related services at the report or individual-level. Predictor variables were constructed from mandated reporting policies occurring at the state-level and were linked to the final report-level dataset before statistical analysis of the data. State and year fixed effects that may impact study outcomes were included as covariates in the model, controlling for time invariant between-state differences. See Table 5 for covariate constructs and type information.

Child maltreatment reporting dispositions. The final dataset also contains reporting disposition data rendered by CPS after the conclusion of an investigation, whereby reports were ordered by their year of disposition. According to the NCANDS child-file codebook, this information is contained in the variable "report disposition." Substantiated and indicated reports were coded as "1" and all other dispositions (i.e., unsubstantiated, intentionally false, closed with no finding, other, alternative response victim, and alternative response nonvictim*)* coded as "0" for the year in which the disposition was determined.

Child maltreatment reports involving substance abuse and related services. Each case also includes variables for alleged/confirmed caretaker alcohol and drug abuse and any alcohol and drug-related services that might have been provided during the course of the investigation. Data related to child maltreatment reporting outcomes involving substance abuse and involving substance abuse-related services are contained in the variables, "alcohol abuse-caretaker(s)," and "drug abuse-caretaker(s)," and "substance abuse services," respectively. In the present study, substance abuse and substance abuse-related services were binarily coded as either

a “0” or “1” based on whether CPS determined the presence of risk factor or substance abuse service in an available NCANDS report year. For example, when caretaker drug use was identified during a CPS investigation and recorded in the NCANDS raw, child-level data, the final dataset aggregated at the report-level coded the drug abuse-caretaker variable as “1.”

Mandated reporting policies. The CPS report-level repeated cross-sectional dataset was also linked to state-level policy variables indicating whether there was: (a) a mandatory reporting requirement in the state, and (b) a reporting requirement that specifically mentioned substance abuse counselors. Coding of mandatory reporting policies were based on effective year of implementation. Effective year of implementation for state-level mandatory reporting policies were gathered from investigating relevant statutes across states and recording their corresponding enactment dates, as demonstrated in Tables 1 and 2. Primary sources from publicly available U.S. state government websites, whereby individual statutes or amendments that included actual language from when a statute was enacted from a year prior to 2000 (i.e., beginning of study review period), were collected to verify the accuracy of enactment dates and count of specific and non-specific child maltreatment reporting policy U.S. states. Substance abuse counselor mandated reporting policies are of primary interest in the present study, but nonspecific (i.e., universal mandated reporting) mandated reporting policies were additionally linked to the final dataset, aggregated at the report-level. These predictor variables do not require creating dummy-coded variables, as they are already dichotomous (i.e., coded 0 or 1 based on implementation year).

Covariates. A key assumption of the methodological approach in the present study was that any potential changes in the outcome variables (i.e., child maltreatment reporting dispositions; reports involving substance abuse; and reports involving substance abuse-related

services) would be due to the implementation of substance abuse counselor mandatory reporting policies at the state-level. Further, we assumed that mandatory reporting polices, and outcomes are not both correlated with unobserved factors contained in the error term. As such, the present study aimed to estimate an average change in outcomes over time, while controlling for time and state invariant factors by including them in the regression model in the form of covariates (see Table 6 for a comprehensive list).

State-level policies. As state-level alcohol and drug policies, such as excise taxes, impact substance consumption and are known to impact risk of child maltreatment (Markowitz & Grossman, 2007), the alcohol and tobacco excise tax rates for each year and state combination was included in the present study. Correspondingly, state-level mental health funding may also impact outcomes and were therefore included in the present study. State-level policies were coded based on the actual dollar amounts of excise taxes each year. Marijuana decriminalization or legalization along with statutes regulating workplace drug testing were not included as covariates due to significant varieties and inconsistencies surrounding definitions of workplace drug testing, and lack of variability for many U.S. states during the study period in marijuana decriminalization.

Table 6

Covariate Constructs and Types

Covariate Constructs	Type
State-Level Policies	1. Beer excise taxes 2. Liquor excise taxes 3. Wine excise taxes 4. Tobacco excise taxes 5. Mental health funding
Caretaker Risk factors	1. Emotional disturbance 2. Domestic violence 3. Financial problem 4. Inadequate housing 5. Intellectual disability 6. Learning disability 7. Public assistance
Child/Perpetrator Demographic Information	1. Maltreatment type 2. Perpetrator prior abuser

Note. Covariates and corresponding levels based on U.S. Census data (i.e., state-level policies) and NCANDS codebook in Appendix A, respectively.

Caretaker risk factors. Caretaker risk factors are identified by NCANDS as data-driven factors known to increase the likelihood of a caretaker abusing or neglecting children, such as inadequate housing, and were accordingly included in the present study (USDHHS, 2017). Caretaker risk factors were binarily coded, as either a "0" or "1" based on whether CPS determined the presence of risk factors in each reported investigation. For example, when domestic violence and inadequate housing were identified as risk factors during a CPS investigation and recorded in the NCANDS raw, child-level data, the final dataset aggregated at the report-level for each state and year coded both the domestic violence risk factor and the inadequate housing variable as "1."

Demographic characteristics. Given the possibility that demographic characteristics of children and alleged perpetrators may influence outcomes, these were included in the present study. The demographic data in the final aggregated dataset included the following: the relationship of perpetrators to children involved, child and perpetrator age (at the time of the report), child and perpetrator ethnicity and sex, whether a perpetrator has a prior abuse history, race, and type of child maltreatment. Demographic characteristics of interest to the present study were recoded and binarily coded as either a "0" or "1." Perpetrator prior abuse history was based on whether CPS determined prior abuse. In reports involving multiple children and perpetrators, a variable for the number of children involved was added to record the number of children involved. See Tables 5 and 6 for additional demographic information.

Length of reporting process. Given the possible influence that the length of the reporting process may have on outcomes, this was also included in the present study. Specifically, a time to final disposition variable was constructed.

Procedure

Data request. Acting under the authority of the Children's Bureau, Administration for Children, Youth and Families, U.S. Department of Health and Human Services, the National Data Archive on Child Abuse and Neglect at Cornell University requires the designation of investigators and their research staff as authorized users of the restricted data for the exclusive purpose of statistical analysis and academic reporting. Given their sensitive nature, the NCANDS child file datasets described in the proposed study are considered restricted data. Access to them requires an application procedure and eligibility criteria for obtaining such data are limited to professionals at an institution of higher education, research, or a government agency, with either faculty or research appointment. Graduate students, including Ph.D. candidates are not eligible to obtain data directly, though are able to gain access as authorized research staff under the conditions that a designated faculty member meeting the eligibility requirements at their institution serves as the Investigator and successfully submits all required documentation. Further, access requires Institutional Review Board (IRB) approval from the designated investigator's institution.

Dr. Plunk, formerly of Eastern Virginia Medical School (EVMS), was the requesting investigator along with Dr. Kelli England (dissertation committee director). Further, we have received and maintained approval from the IRB at EVMS (see Appendix B) and NCANDS restricted data access. No significant changes to the proposed study were suggested by the dissertation committee, therefore there were no amendments submitted to the IRB or to Cornell University, prior to or during data preparation, aggregating and analysis. However, it should be noted that former committee member, Dr. Andrew Plunk recently separated from EVMS after data analysis.

Data and privacy safeguards. The following existing safeguards have been put in place by NCANDS to prevent child and alleged/confirmed perpetrator identification: 1) children's date of birth, county of residence, date of incidence, and identification variables for the case workers involved have been excluded from the data; 2) records involving a fatality do not contain any geographic identifiers; 3) county of report is masked for counties with fewer than 1,000 records; 4) report date has been recoded so that days 1-15 and 16-31 are rounded to the 8th and 23rd of the month, respectively; 5) all other dates (e.g., dates of specific services) have been adjusted to conform to intervals based on the rounding of the report date; 6) child ages over 18 have been recoded to "18 or older;" 7) perpetrator ages over 70 have been top-coded to "70 or older" and bottom-coded to "under 18;" 8) race and ethnicity are masked when there are few cases at the county level.

Data conversion. The full child-level dataset was ultimately converted from child-level to CPS report-level panel data before statistical analysis through deletion of variables that were not of primary interest to the present study and recoding of the data. The purpose of aggregating the data at the report-level was twofold. First, these CPS report-level data were not able to be linked back to the full NCANDS data, so as to further decrease the likelihood of individual identification. Second, this resulted in a parsimonious finished dataset to use for statistical analysis. Recoding of the child-level data involved: 1) dropping all report and child-level identifiers; 2) dropping all cases without geographic identifiers (i.e., deaths); 3) dropping all geographic identifiers except for state of report, and 4) dropping all dates except for year of report. Exclusion criteria for the study included any NCANDS cases whose records did not indicate the state or year of reporting.

Demographic factors were further recoded: 1) by addition of a single indicator for child and perpetrator minority race/ethnicity status (i.e., Non-Hispanic Caucasians vs. Other race/ethnicity vs. cases including both Non-Hispanic Caucasian and Other races/ethnicities); 2) by dropping individual ages and adding categorical variables for oldest and youngest children (i.e., "0-2," "3-5", "6-8", "9-11", "12-15", "16-17" and "18+"); 3) by adding separate variables for maltreatment types that included either a "0" or "1" based on whether the particular type of suspected maltreatment was substantiated or indicated for any children in the report (i.e., physical abuse, neglect, medical neglect, sexual abuse, psychological or emotional maltreatment, no alleged maltreatment, other, and unknown or missing); and 4) by merging substantiated and indicated CPS report outcomes. It should be noted that upon preparation and recoding of the data, many NCANDS demographic variables of interest (especially type of child maltreatment) that were thought to be aggregated at the CPS report-level were unable to be analyzed due to being subsets of the child-level data, and utilizing child files would breach both Cornell University's Data Use Agreement and EVMS IRB. There were additionally some significant categorizing and coding differences across the 2000 to 2016 study review period, that were identified and accounted for in the present study. Please refer to Appendix C for additional information.

Access to restricted data was limited to a separate computer in the requesting investigator, Dr. Plunk's, locked office at EVMS that was designated by the institution for storage of sensitive data and is not connected to the campus network. All sensitive data preparation and analyses occurred on this computer. It should also be noted that Dr. Plunk had sole access to the full child-level dataset, which was later converted to CPS report-level panel

data before conducting statistical analyses for this project in compliance with the IRB and NCANDS' data use agreement.

Power analysis. To evaluate the minimum sample size needed for an adequate power level of .80 (Cohen, 1992), a power analysis was conducted using statistical power analysis program G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007). To test Aims 1 and 2, fixed-effects logistic regression analyses were used to determine if the implementation of mandated reporting laws that specifically mention substance abuse counselors accounted for the majority of variance in child maltreatment reporting outcomes (i.e., proportion of substantiated or indicated reports; reports involving substance abuse; reports in which substance abuse services were provided) when controlling for possible covariates (Table 4). For multiple regression, a small effect size is .02, a medium effect size is .15, and a large effect size is .35, with an ES index represented by f^2 (Cohen, 1992). Meta-analyses of relevant child maltreatment research literature suggest a range of small, $f = 0.10$ (f^2 of .02) to medium effect sizes, $f = 0.25$ (f^2 of .15); consequently, a small effect size was selected for the present study to be conservative and ensure detection of effect regardless of magnitude (Briere & Elliott, 2003; Chen et al., 2010; Hillberg, Hamilton-Giachritsis, & Dixon, 2011). To examine Hypotheses 1a to 2c, with an α of .05, predictor variables (e.g., mandated reporting policy, state-level alcohol, and drug policy), and a small effect size of .02, a sample of 954 participants was needed to achieve a power of .80.

Based on the Apriori power analysis described above, we needed a minimum of 954 child maltreatment reports included in the sample to ensure that all analyses are sufficiently powered for the present study. As anticipated, the NCANDS data consisted of several million child maltreatment reports among the 50 U.S. states, across 16 years (2000 – 2016). Of these reports, 55,416,398 met study criteria and were included in the analyses, suggesting ample power to

detect even the smallest of possible effects. Albeit samples of this magnitude are expected to provide precise estimates of coefficients by allowing for the detection of very small effect sizes, such robust samples also introduce the possibility of inaccurate conclusions, such as allowing for the detection of very small effect sizes, which might not be practically significant, such as a policy's clinical significance (Allison, 1999, 2009; Cohen, West, & Aiken, 2014; Menard, 2002; Osborne, 2015; & Pampel, 2000). Significance testing additionally does not provide necessary information on the strength, direction, and clinical significance of the relationship (Pampel, 2000). The present study defined statistical significance of a predictor variable by means of a 95% confidence interval (CI) that does not contain zero, and reported odds ratios (OR), or standard measures of effect, for all analyses (Osborne, 2015; Plunk et al., 2016).

Data approach. The present study utilized a quasi-experimental approach using repeated cross-sectional data, which is a common analytic method in research involving larger, administrative and policy outcomes (Athey, 2017; Callaway & Sant 'Anna, 2020). The quasi-experimental approach is based on the difference-in-differences (DiD) technique, whereby exposure to a policy change is evaluated by comparing pre- and post-intervention differences in an outcome for treated groups to those for untreated comparison groups (Goodman-Bacon, 2021; Obermeyer & Emanuel, 2016). Fixed-effects regression models were used to control for biases introduced by stable between-groups differences and time trends wherein stable state differences and time trends are canceled out, yielding the policy exposure effect (Callaway & Sant 'Anna, 2020; Goodman-Bacon, 2021; Plunk et al., 2016).

Experimental designs allow researchers to control for threats to internal and external validity. "True experiments" indicate that major features of a study can be well-controlled to either eliminate or make invalid threats to internal and external validity through researchers'

ability to randomly assign participants to study conditions (i.e., predictor variables). Research designs where researchers cannot feasibly or ethically exert the control required of true experiments are referred to as quasi-experimental designs (Campbell & Stanley, 1963; Tabachnick & Fidell, 2019). When all the assumptions of the DiD approach are met, this quasi-experimental design can allow researchers to make generalized causal inferences and are frequently observed in econometrics and public health law research (PHLR) to evaluate the impact of policy across various disciplines (Hatcher, 2013; Kazdin, 2021; Pearl, 2009). In a true experimental design, possible threats to internal validity are varied out unsystematically across groups due to random assignment whereas in a quasi-experimental design, possible threats to internal validity in combination with another threat, such as selection bias and history, indicates that groups might systematically vary. DiD research designs can yield comparably strong causal inferences based on how researchers make implausible those threats to internal validity for which random assignment typically accounts for (Hatcher, 2013; Tabachnick & Fidell, 2019).

To satisfy the requirements of making causal inferences, the cause must temporally precede the effect, the cause must be related to the effect, and there can be no plausible alternative explanations for the effect aside from the cause (Cohen et al., 2014; Pearl, 2009). It should be noted that many quasi-experimental designs do not utilize a DiD approach, and therefore cannot infer causation (Shadish, Cook, & Campbell, 2002). Although the conditions of the proposed study already existed and therefore cannot be manipulated or randomized, quasi-experimental designs can approximate randomized controlled trials (RCTs), by allowing researchers to estimate an average effect of mandated reporting policies over time while controlling for time and state-invariant factors (Lechner, 2010; Plunk et al., 2016). NCANDS archival data and state-level mandatory reporting policies represent a naturally occurring contrast

between a treatment and comparison condition, which may constitute a natural experiment, whereby generalized causal inferences can cautiously be made (Kazdin, 2021; Shadish et al., 2002).

Data analysis. All study analyses were conducted on the final aggregated, report-level dataset using the version 3.5.1 of the statistical language R (R Development Core Team, 2018). Aims 1 and 2 were tested using fixed-effects logistic regression, which controlled for time and state-invariant factors by allowing intercepts to differ across time and between policy groups (Allison, 2009; Lechner, 2010; Menard, 2002; Plunk et al., 2014). Allison (2009) discussed that fixed-effects regression modeling should be used when directly comparable outcome variables are measured for each CPS report on at least two occasions (i.e., year), and when predictor variables change in value across these occasions for a substantial portion of the sample. This method made it possible to control for variables that have not or cannot feasibly be measured by using each state as its own control (Allison, 2009; Lechner, 2010). Directly comparable outcome variables can be defined as those that have similar meaning and metric (Allison, 1999, 2009; Osborne, 2015). Logistic regression was used for all analyses to estimate the probability of substantiated and indicated child maltreatment reports, child maltreatment reports involving substance abuse (i.e., drug or alcohol use), and child maltreatment reports in which substance-abuse related services were offered based on the presence of a policy requiring substance abuse counselors to report suspected child abuse and neglect.

The basic structure of the regression models is:

$$Y_{ist} = A_s + B_t + \beta_1 X_{1ist} + \ldots + \beta_n X_{nist} + \beta POLICY_{st} + \varepsilon_{ist}$$

Where Y_{ist} represents a child maltreatment reporting outcome (e.g., substantiated or indicated child maltreatment report status) for *i* individuals in *s* state in *t* year; A_s and B_t are the fixed effects for states and years, respectively; X_1 through X_n represent the covariates (see Table 3), and $\beta POLICY_{st}$ is the mandatory reporting policy for each state and year. This was the coefficient of interest in our analyses, which changed over time, based on the effective date of policy implementation, and permitted us to examine changes in substance abuse mandatory reporting requirements. This allowed the present study to examine whether: 1) the timing of the implementation of mandatory reporting requirements for substance abuse counselors was positively associated with child maltreatment report substantiation; 2) increased likelihood of a report involving substance abuse and substance abuse-related services; and 3) whether nonspecific mandatory reporting requirements contributed to the impact on outcomes. ε_{ist} represents purely random variation across states and years.

The Difference-in-Difference (DiD) approach. The Difference-in-Difference method is a well-established econometrics tool and empirical strategy that has a longstanding history beginning in the field of public health with cholera transmission in the 1900's (Snow, 1855). The main idea of DiD is a strategy that can identify mean causal effects by computing the difference of mean outcomes of treated and control groups after the treatment, subtracted by the outcome difference that had preexisted prior to treatment.

This research methodology aided in demonstrating that persons in the United Kingdom who received contaminated water from the main river in London had significantly higher death rates due to Cholera, which had a profound impact on public health and policy (Callaway & Sant 'Anna, 2020; Goodman-Bacon, 2021; Lechner, 2010; Snow, 1855). Rose (1952) applied the DiD method to study the effects of mandatory mediation on work stoppage, further supporting

interdisciplinary and adaptive use of this methodology to contribute to public health and many other disciplines. Econometricians often utilize DiD analyses, using changes in state laws and regulations to define pre-treatment periods (i.e., prior to policy implementation) and unaffected comparison groups (i.e., states that have a different policy than the one of interest) serving as controls. When applying nonlinear models in a DiD framework, researchers typically use a linear index structure along with a nonlinear link function where the treatment variable is binary (i.e., D = {0,1}), and measurements of these variables span 2 time periods (i.e., T = {0,1}) where period 0 indicates a time period before the treatment {pretreatment period}and period 1 indicates a time period after the treatment took place {post-treatment period}, where identifying the mean effect of switching D from 0 to 1 across outcome variables is the objective. The current study utilized the DiD approach to examine the effectiveness of a specific mandatory reporting policy by means of creating simultaneous comparisons using aggregated NCANDS and CWIG policy data to: 1) compare states with the specific (i.e., substance abuse counselor) statute to states without the statute; and 2) compare the former states before and after the policy of interest was implemented into law.

A major assumption of this DiD approach is that treated and nontreated groups are subject to the same time trends. If it is determined that the treatment has had no effect in the pre-treatment period (i.e., time period before mandatory reporting policy implementation), then an estimate of the treatment effect in a time period in which it is known to have none can be used to remove the effect of confounding factors that a comparison of post-treatment outcomes of treated and nontreated may be subject to (Imbens & Woodridge, 2009; Lechner, 2010; Pampel, 2000; Wing et al., 2018). The following assumptions must also hold true in order for DiD outcomes to be interpreted:1) Stable Unit Treatment Value Assumption (SUTVA; Rubin, 1977) which

implies that treatments are completely represented such that there are no relevant interactions between members of the population; 2) Exogeneity, which concerns the components of the conditioning variables are not being influenced by the treatment; 3) No Effect of the Pre-treatment Population (NEPT), whereby in the pre-treatment time period, the treatment had no effect on the pre-treatment population; 4) Common Trend, which states that the differences in the expected potential nontreatment outcomes over time are unrelated to the treated or control group in the post-treatment period; and lastly, 5) Bias Stability (BS).

Regression coefficients of the interaction terms between time and treatment groups capture the main effects and the mean changes of the outcome variables for the nontreated groups over time. These are added to the mean level of the outcome variables for the treated prior to treatment (i.e., mandatory reporting policy implementation year) to obtain the mean outcome that the treated would have experienced if they had not been subjected to treatment (Allison, 2009; Callaway & Sant 'Anna, 2020; Imbens & Woodridge, 2009; Lechner, 2010; Pampel, 2000; Wing, Simon, & Bello-Gomez, 2018). This method is currently one of the most widely used empirical research designs to estimate the effects of policy changes or interventions in economics and econometrics (Goodman-Bacon, 2021; Hunt, 1995; Lechner, 2010; Puhani, 2008). One such reason is the common trend assumption that must hold either conditionally or unconditionally on variables that are not impacted by treatment. Lechner (2010) and others report that the smaller the variance and the larger the sample size, the more precise this time-period estimator will be (Callaway & Sant 'Anna, 2020; Lechner, 2010; Menard, 2002). Specifically, including many similar time periods and many similar groups of nontreated, as was done in the current study, allows for more precise estimation and testing for the common trend assumption, and more reliable inference.

CHAPTER III

RESULTS

Data Preparation

Missing data and outliers. Prior to data aggregation and conducting analyses, missing data and outliers were addressed. The NCANDS archival child files require CPS and associated agencies nationwide to collect as much required information as is available from caseworkers in preparation for submission of annual child file reports. Consequently, there is typically minimal missing data amongst those states and U.S. territories that choose to participate due to the nature of CPS and NCANDS data collection process. Any NCANDS cases whose records did not indicate the state or year of reporting were excluded from statistical analyses. Additionally, for CPS reports where no victimization was determined, the perpetrator fields contain missing data, and were therefore excluded from analyses. Only states with substance abuse mandatory reporting policies were included in Aim 1; states with incomplete reporting while policy changed were excluded from analyses (i.e., IA, ND, and OR).

It was determined upon aggregation and preliminary analysis of NCANDS and policy data that only 3 of the 14-substance abuse counselor mandatory reporting policy states of primary interest reported data for substance abuse-related services (Hypothesis 1C). Similarly, 26 of the 50 nonspecific mandatory reporting policy states were missing this data during the 2000 to 2016 reporting period (Hypothesis 2C). Due to this particular outcome variable missing well over 50% of substance abuse services information and the nature of this sensitive data rendering imputation obsolete, the two regression analyses pertaining to substance abuse services were not conducted (Tabachnick & Fidel, 2019).

There are also state-level reporting differences that impact missingness, such as certain states, including Pennsylvania, not being allowed by state law 1) to provide or collect any data pertaining to race or ethnicity in its NCANDS data submission, and 2) to include more than one child per CPS report; whereas, in all other U.S. states and territories, children that are involved in the same investigation are given the same report ID (USDHHS, 2004). For data reporting and analytic purposes, NCANDS considers only those children involved in CPS reports that have been assigned substantiated or indicated following investigation, to be victims of maltreatment. There were no problems with univariate normality. Relationships between all dependent variables and proposed covariates were linear. Logistic regression, which utilizes maximum likelihood estimation (MLE), accounted for, and addressed the remaining missingness in the final sample (Hatcher, 2013).

Preliminary Analyses

Statistical assumptions. Logistic regression is a nonparametric technique that utilizes MLE to predict the likelihood of observing study outcome variables, given the estimated coefficients (Osborne, 2015; Pampel, 2000). Evaluating the assumptions of logistic regression is vital to produce valid regression estimates, thereby limiting the possibility of calculating biased parameter estimates, or regression coefficients, and increasing the argument for making generalized causal inferences (Menard, 2002; Osborne, 2015; Shadish et al., 2002). The assumptions of logistic regression are based on MLE, and as a result, slightly differ from ordinary least squares (OLS) regression assumptions (Lechner, 2003; Menard, 2002). Specifically, MLE assumptions require: 1) all relevant predictors of the outcome variables to be included in the model; 2) the absence of irrelevant predictors of the outcome variables; and 3) absence of multicollinearity and singularity; 4) all variables measured without or with minimal

error; and lastly, 5) homoscedasticity (Menard, 2002; Osborne, 2015). The MLE assumptions for logistic regression were addressed prior to completing any primary analyses. Assumptions were addressed statistically as well as methodologically, to circumvent the likelihood of violating assumptions and biasing policy effects.

Descriptive statistics. Descriptive analyses were conducted to examine child maltreatment reporting outcomes. CPS reports that have been assigned the substantiated or indicated response following investigation, to be victims of maltreatment. For CPS reports where no victimization was determined, the perpetrator fields contain missing data. The report-level and demographic characteristics of child maltreatment included 25.30% confirmed (i.e., substantiated or indicated) cases, which included, 14,024,082 survivors over the course of the present study's 2000 to 2016 review period and aligns with reported statistics of child maltreatment and services rendered to families by CPS and the U.S. Census (USDHHS; 2018). See Tables 5 and 6. Descriptive information of study measures by child maltreatment reporting policy were also examined, with assistance from the Child Welfare Information Gateway (2016c).

Primary Analyses

Overall, it was predicted that substance abuse counselor mandatory reporting policies would be significant predictors of CPS report substantiation, caretaker substance abuse and substance abuse-related services. Specifically, that the timing of the implementation of mandatory reporting requirements for substance abuse counselors would be associated with increased likelihood of child maltreatment report substantiation, (caretaker) substance abuse, and (caretaker) substance abuse-related services rendered by CPS. Non-specific policy states served as controls for specific mandatory reporting policy states (i.e., 14 U.S. states). It was also

predicted that non-specific mandatory reporting policies would not be a significant predictor of CPS report substantiation, substance abuse, or substance abuse-related services. Particularly, it was expected that the timing of the implementation of mandatory reporting requirements for substance abuse counselors within a state would be associated with increased likelihood of a report being substantiated or indicated compared to those states that do not have such requirements.

Statistical Analysis Testing Aim 1

Aim 1 examined whether the implementation of substance abuse counselor reporting requirements was associated with the reporting process, including the disposition of CPS reports and the presence of substance abuse and substance abuse-related services. Two outcome variables were used: Maltreatment scores (CPS report disposition measure) and Substance Abuse scores (substance abuse measure). Hypotheses were not supported, such that the CPS report substantiation, (*OR*= 1.07, 95% CI [.189, 6.14]) and caregiver substance abuse, (*OR*= 1.13, 95% CI [.737, 1.74]) did not reach significance (see Tables 7 and 8). Hypothesis 1C utilizing the Substance abuse-related services data was unable to be analyzed due to systematic missing data in the outcome variable. Tobacco excise taxes (covariate) were significantly associated with CPS report substantiation, (*OR*= 1.12, 95% CI [1.01, 1.25]) and caretaker substance abuse, (*OR*= 0.74, 95% CI [0.55, 1.00]). There were no significant differences in child maltreatment reporting dispositions (i.e., substantiation or indication) at the report-level across specific reporting requirements; suggesting that the timing of the implementation of mandatory reporting requirements for substance abuse counselors is not positively associated with child maltreatment report substantiation or indication.

Specifically, Hypothesis 1A:

$$MAL_{ist} = A_s + B_t + \beta_1 X_{1ist} + \ldots + \beta_n X_{nist} + \beta POLICY_{st} + \varepsilon_{ist}$$

Whereby substance abuse counselor mandatory reporting was not a significant predictor of child maltreatment report substantiation. Hypothesis 1B:

$$SUB_{ist} = A_s + B_t + \beta_1 X_{1ist} + \ldots + \beta_n X_{nist} + \beta POLICY_{st} + \varepsilon_{ist}$$

Table 7

Logistic Regression of Specific Mandatory Reporting Policies on CPS Report Substantiation

Model 1: Substance Abuse Counselor Reporting Policy							
Block 1:						95% CI for OR	
	B	*SE*	*Wald*	*P*	*OR*	*LL*	*UL*
MH Funding	0.01	0.01	0.30	0.16	1.01	0.99	1.03
Tob Ex	0.12	0.06	0.00	0.04	1.12	1.01	1.25
Spirit Ex	0.08	0.05	0.11	0.10	1.08	0.98	1.20
Beer Ex	-1.64	3.60	0.42	0.65	0.19	0.00	221
SA Counselor Reporting Policy	0.08	0.08	0.16	0.39	1.07	0.19	6.14
Nagelkerke R^2							.006

Note. B = unstandardized coefficient, SE = standard error, Wald = Wald $\chi^{2,}$ and OR = odds ratio. Refers to Hypothesis 1A. MH Funding= Mental Health Funding. Tob Ex= Tobacco Excise Taxes. Spirit Ex= Liquor Excise Taxes. Beer Ex= Beer Excise Taxes. SA Counselor Reporting Policy = Specific Mandatory Reporting Policies. State-level policies were coded based on the actual dollar amounts of excise taxes each year. Only states with substance abuse mandatory reporting policies were included; states with incomplete reporting while policy changed were excluded: Iowa, North Dakota, and Oregon; N=17,077,510 cases.

Table 8

Logistic Regression of Specific Mandatory Reporting Policies on Caregiver Substance Abuse

Model 1: Substance Abuse Counselor Reporting Policy							
Block 1:						95% CI for OR	
	B	*SE*	*Wald*	*p*	*OR*	*LL*	*UL*
MH Funding	0.66	0.45	0.02	0.14	1.93	1.76	4.62
Tob Ex	-0.30	0.15	0.00	0.05	0.74	0.55	1.00
Spirit Ex	0.40	0.42	0.12	0.34	1.49	0.66	3.33
Beer Ex	-4.81	13.6	0.52	0.72	0.01	0.00	2.80
SA Counselor Reporting Policy	0.13	0.23	0.32	0.57	1.13	0.74	1.74
Nagelkerke R^2							.007

Note. B = unstandardized coefficient, SE = standard error, Wald = Wald $\chi^{2,}$ and OR = odds ratio. Refers to Hypothesis 1B. MH Funding= Mental Health Funding. Tob Ex= Tobacco Excise Taxes. Spirit Ex= Liquor Excise Taxes. Beer Ex= Beer Excise Taxes. Substance Abuse Counselor = Specific Mandatory Reporting Policies. State-level policies were coded based on the actual dollar amounts of excise taxes each year. Only states with substance abuse mandatory reporting policies were included; states with incomplete reporting while policy changed were excluded: Iowa, North Dakota, and Oregon; N=17,077,510 cases.

Statistical Analysis Testing Aim 2

Study Aim 2 was to examine whether there were differences in the above outcomes based on non-specific (i.e., any health professionals) reporting requirements. Multivariate logistic regressions revealed a null effect of type of mandated reporting policy on the outcome variables. Analyses were consistent with the results of Aim 1, such that the CPS report substantiation, (*OR*= .953, 95% CI [.691, 1.32]), and caregiver substance abuse, (*OR*= .351, 95% CI [.018, 6.52]) did not reach significance (see Tables 8 and 9). Hypothesis 2C, which utilized the NCANDS substance abuse-related services variable was unable to be analyzed due to systematic missing data. There were no significant differences in child maltreatment reports involving substance abuse at the report-level across substance abuse counselor mandated reporting requirements; suggesting that the timing of the implementation of mandatory reporting requirements for substance abuse counselors within a state is not associated with increased likelihood of a report involving substance abuse. Hypothesis 2A:

$$MAL_{ist} = A_s + B_t + \beta_1 X_{1ist} + \ldots + \beta_n X_{nist} + \beta POLICY_{st} + \varepsilon_{ist}$$

whereby, the timing of the implementation of non-specific mandatory reporting requirements (i.e., any mandatory reporting policies for health professionals) within a state was not associated with increased likelihood of report substantiation or indication compared to those states that do not have such requirements. Hypothesis 2B:

$$SUB_{ist} = A_s + B_t + \beta_1 X_{1ist} + \ldots + \beta_n X_{nist} + \beta POLICY_{st} + \varepsilon_{ist}$$

Table 9

Logistic Regression of Non-Specific Mandatory Reporting Policies on CPS Report Substantiation

Model 1: Any Health Professional Mandated Reporting Policy							
Block 1:						95% CI for OR	
	B	*SE*	*Wald*	*p*	*OR*	*LL*	*UL*
MH Funding	0.01	0.01	0.01	0.08	1.01	0.99	1.02
Tob Ex	0.08	0.05	0.01	0.09	1.08	0.98	1.20
Spirit Ex	0.03	0.02	0.01	0.11	1.03	0.99	1.10
Beer Ex	-0.17	0.21	0.17	0.41	0.85	0.57	1.27
Any Mandated Reporting Policy	-0.05	0.16	0.59	0.77	0.95	0.70	1.32
Nagelkerke R^2							.004

Note. B = unstandardized coefficient, SE = standard error, Wald = Wald $\chi^{2,}$ and OR = odds ratio. Refers to Hypothesis 2A. MH Funding= Mental Health Funding. Tob Ex= Tobacco Excise Taxes. Spirit Ex= Liquor Excise Taxes. Beer Ex= Beer Excise Taxes. Any Mandated Reporting = Non-Specific Mandatory Reporting Policies. State-level policies were coded based on the actual dollar amounts of excise taxes each year. States with incomplete reporting while policy changed were excluded: IA, ND, and OR. N=55,416,398 cases.

Table 10

Logistic Regression of Non-Specific Mandatory Reporting Policies on Caregiver Substance Abuse

Model 1: Any Health Professional Mandated Reporting Policy							
Block 1:						95% CI for OR	
	B	*SE*	*Wald*	*P*	*OR*	*LL*	*UL*
MH Funding	-0.06	0.07	0.13	0.36	0.94	0.82	1.10
Tob Ex	-0.18	0.30	0.30	0.55	0.84	0.47	1.50
Spirit Ex	-0.01	0.02	0.43	0.66	0.99	0.96	1.03
Beer Ex	-0.56	0.52	0.08	0.28	0.57	0.20	1.59
Any Mandated Reporting Policy	-1.05	1.50	0.23	0.48	0.35	0.02	6.52
Nagelkerke R^2							.003

Note. B = unstandardized coefficient, SE = standard error, Wald = Wald $\chi^{2,}$ and OR = odds ratio. Refers to Hypothesis 2B. MH Funding= Mental Health Funding. Tob Ex= Tobacco Excise Taxes. Spirit Ex= Liquor Excise Taxes. Beer Ex= Beer Excise Taxes. Any Mandated Reporting = Non-Specific Mandatory Reporting Policies. State-level policies were coded based on the actual dollar amounts of excise taxes each year. States with incomplete reporting while policy changed were excluded: IA, ND, and OR. N=55,416,398 cases.

Table 11

Summary of Hypothesized Results

Hypothesis	Description	Data Analysis	Results	Supported or Not
1a	The timing of the implementation of mandatory reporting requirements for substance abuse counselors would be associated with increased likelihood of child maltreatment report substantiation or indication.	Multivariate, Fixed Effects Logistic Regression.	Substance abuse counselor mandatory reporting policies were not a significant predictor of CPS report substantiation (*OR*= 1.07, 95% CI [.189, 6.14]).	No.
1b	The timing of the implementation of mandatory reporting requirements for substance abuse counselors within a state would be associated with increased likelihood of a report involving substance abuse.	Multivariate, Fixed Effects Logistic Regression.	Substance abuse counselor mandatory reporting policies were not a significant predictor of a CPS report involving caretaker substance abuse (*OR*= 1.13, 95% CI [.737, 1.74]).	No.
1c	The timing of the implementation of mandatory reporting requirements for substance abuse counselors within a state would be associated with increased likelihood of a report involving substance abuse services.	Multivariate, Fixed Effects Logistic Regression.	Unable to determine whether substance abuse counselor mandatory reporting policies were a significant predictor of a CPS report involving caretaker substance abuse-related services due to missing substance abuse services data for the majority of states.	N/A
2a	The timing of the implementation of non-specific (i.e., any health professionals) mandatory reporting requirements within a state would be associated with increased likelihood of a report being	Multivariate, Fixed Effects Logistic Regression.	Non-specific mandatory reporting policies were not a significant predictor of a CPS report substantiation (*OR*= .953, 95% CI [.691, 1.32]).	No.

	substantiated or indicated.			
2b	The timing of the implementation of non-specific (i.e., any health professionals) mandatory reporting requirements within a state would be associated with increased likelihood of a report involving substance abuse.	Multivariate, Fixed Effects Logistic Regression.	Non-specific mandatory reporting policies were not a significant predictor of a CPS report involving caretaker substance abuse (*OR*= .351, 95% CI [.018, 6.52]).	No.
2c	The timing of the implementation of mandatory reporting requirements for non-specific mandatory reporting requirements within a state would be associated with increased likelihood of a report involving substance abuse services compared to those states that do not have such requirements.	Multivariate, Fixed Effects Logistic Regression.	Unable to determine whether non-specific mandatory reporting policies were a significant predictor of a CPS report involving caretaker substance abuse-related services due to missing substance abuse services data for the majority of states.	N/A

CHAPTER IV

DISCUSSION

Research suggests caregiver substance abuse presents disproportionate risk to children and adolescents, and the impact of adverse childhood experiences impact psychological functioning, development, and health-risk comorbidities (Krase & Delong-Hamilton, 2015; McElroy, 2012; USDHHS, 2021). The current study sought to examine the association of specific (i.e., substance abuse counselor) and non-specific (i.e., all health professionals) U.S. child abuse and neglect mandated reporting policies on relevant child maltreatment outcomes. Although some public health literature has demonstrated the positive impact of mandated health professionals on the integrity of the child maltreatment reporting process, existing research is minimal, and focuses on demographic differences between professionals and nonprofessionals mandated to report suspected child abuse and neglect in a designated year. No known study to date has examined the efficacy of implementing state-mandated reporting policies among substance abuse counselors. The purpose of this research was to aid in informing the utility of implementing specific mandated reporting policies, including consequences of implementing such policies amongst mental health professionals who are disproportionately involved in child maltreatment cases across the U.S. Through aggregation and analysis of a national repository of child abuse data, all publicly available archival mandatory reporting statutes and administrative NDACAN Child Files collected between 2000 – 2016 served as the current study's data sample and review period. Child maltreatment reporting outcomes (i.e., CPS report dispositions, substance abuse, and substance abuse-related services) were predicted to vary based on the timing of state-level mandatory reporting requirements. It was predicted that the implementation of substance abuse counselor reporting requirements amongst the 14 U.S. states who had adopted

these policies would be positively associated with the reporting process, including increased likelihood of CPS report dispositions being substantiated or indicated following a CPS investigation, and the presence of caretaker substance abuse and substance abuse-related services.

Aim 1: Specific Reporting Requirements and Child Maltreatment Outcomes

To extend prior research suggesting that mandating specific health professionals to report suspected abuse may be associated with improved reporting outcomes, hypotheses comparing the timing of the implementation of specific child maltreatment reporting policies were evaluated through aggregating substance abuse counselor mandated reporter policy enactment dates across the 14 U.S. states adopting this policy spanning the 2000 – 2016 study review period (Eckenrode et al., 1988; Kahn, Gupta-Kagan, & Hansen, 2017; Kesner, Bingham, & Kwon, 2009). Logistic regression analyses conducted on the final aggregated NCANDS database suggest that mandating substance abuse counselors to report may not be a significant predictor of child maltreatment reporting outcomes. Specifically, child maltreatment reports were not more likely to be substantiated or indicated after a CPS investigation or involve caretaker substance abuse among the 14 states currently implementing this policy in the U.S. after they began the policy compared to before it was enacted. Of covariates included in regression analyses, state tobacco excise tax rates were the only covariate significantly associated with CPS report substantiation or indication.

Given the already overburdened nature of the DCFS system, these analyses suggest several possibilities. First, it is possible that mandating substance abuse counselors to report may not be efficacious in identifying and preventing child abuse and neglect or may need to be further evaluated prior to devoting additional state and federal resources. Second, it is also possible that

state-to-state and between-city differences in how investigations are defined, coded, and conducted introduced error in the database itself. Although these findings were unexpected, there may also be limitations in the way substance use was measured by NCANDS that contributed to the lack of association of reported caretaker alcohol and drug abuse.

Among U.S. states implementing substance abuse counselor mandated reporting policies, there is much variation in the way in which each state defines such counselors. This variation may be a potential byproduct of using a restrictive administrative dataset, including the way these CPS data are annually collected by CPS agencies and compiled and reported by NCANDS within Cornell University. Another factor pertaining to caregiver substance abuse is that the current database did not differentiate between subclinical and clinical levels of alcohol and drug use. While incorporating subclinical levels of substance use extends prior research, the proposed associations may have been more salient in a higher-risk caregiver sample.

Despite our total N including 55,416,398 CPS reports, and substance abuse-related services being a variable created and coded by NCANDS, this particular outcome variable was missing well over 50% of substance abuse-related services information and was unable to be analyzed (Tabachnick & Fidel, 2019). Additionally, Oregon and North Dakota were not yet reporting to NCANDS when their policy changes occurred, and Iowa starting reporting to NCANDS the year of their policy change (CWIG, 2020). Missingness could be related to a range of factors, including the year of reporting, whereby later years likely have more complete reports due to increased NCANDS data reporting standards, agency funding, investigator competency, and the amount of time spent investigating child maltreatment reports (Palusci et al., 2016; USDHHS, 2017).

Of covariates included in regression analyses, state tobacco excise tax rates were the only covariates significantly associated with CPS report substantiation or indication, and caregiver substance abuse in Hypothesis 1A and 1B. It should be noted that there were observable increases in state tobacco excise tax rates, such as Connecticut raising taxes from $2 to $3 per pack of cigarettes in 2009, and to $3.9 in 2016. Although states adopting particularly high excise tax rates for tobacco and other substances may demonstrate their value and prioritizing of allocating resources to public health, it is also possible this may lead to additional caregiver stress and other related consequences of increasing prices on maladaptive coping behaviors.

Aim 2: Non-Specific Reporting Requirements and Child Maltreatment Outcomes

Although there is evidence of higher reporting rates among states that require universal reporting, these policies are rarely systematically evaluated (Eldred & Gifford, 2016; Palusci & Vandervort, 2014; Palusci, Vandervort, & Lewis, 2016). In one such investigation using NCANDS data from 2000 to 2010, Palusci and colleagues (2016) found that child maltreatment reporting statutes were significantly associated with reporting rates, such that mandated reporting practices were associated with increases in the total number of referrals made to CPS, and substantiated or indicated reports. Other researchers have found similar results (CWIG, 2020; Eckenrode et al., 1988; Fang et al., 2012; Raissian, Dierkhising, Geiger, & Schelbe, 2014). Although the increases in referrals may lead to increased identification of child victims, increases can also lead to a substantial burden on CPS agencies and their resources (Fang et al., 2012; Mathews et al., 2016; Palusci et al., 2016).

Hypotheses comparing non-specific (all health professionals) mandatory reporting requirements (statutes) were evaluated to replicate and extend prior research suggesting that non-specific mandated reporting policies may also result in poor mental and physiological health

outcomes for children, such as possible guilt, shame, and distress in addition to contributing to overburdening local state CPS agencies (Messman-Moore et al., 2005). Findings of the current study indicate that non-specific mandatory reporting policies across U.S. states were not a significant predictor of CPS report substantiation or caretaker substance abuse. Similar to Aim 1, these national data suggest that non-specific mandatory reporting statutes may also not be worth devoting additional state and federal resources to continue implementing as they are, without additional evaluations of how they contribute to identifying and preventing child abuse and neglect. However, as discussed above, limitations to this national dataset include variability in how variables are defined and coded among states; as well as precision in measuring of key variables such as substance abuse. Like Hypothesis 1C, the substance abuse-related services NCANDS variable was systematically missing data for 26 of the 50 nonspecific mandatory reporting policy states, therefore Hypothesis 2C was also unable to be analyzed.

Methodological Strengths

There are several methodological strengths of this work, including examining policy through the lens of a multidisciplinary, peer-reviewed theory, utilizing a quasi-experimental, DiD research design, and the generalizability of our findings. The theory of triadic influence (TTI) highlights the interconnectivity between psychology, sociology, and public health research questions, and provides a means of understanding the impact of legislation on health outcomes by combining relevant theories across disciplines to answer those questions through a multidisciplinary lens (Burris et al., 2010; Flay et al., 2009). TTI theory is often used in the emerging field of public health law research, and its use in informing the current study's aims and hypotheses is a strength as its application to efficacy and effectiveness have rarely been subject to academic research.

Despite the increase in substantiated and indicated child maltreatment reports over the years, suspected child abuse and neglect remains considerably underreported (Finkelhor, Turner, Ormrod, & Hamby, 2009; Mathews, Lee, & Norman, 2016; Stoltenborgh, Bakermans-Kranenburg, Alink, & Van Ijzendoorn, 2015). Another strength of this study is that the issue of underreporting was addressed to the extent possible in our design, by using the most comprehensive data system of child abuse and neglect available through NCANDS at Cornell University. The collection of legal data using standardized transparent and reproductible methods critical to science is relatively lacking and needed (Meier, Merrill, & Gebbie, 2009). Most changes in laws and regulations affecting public health are natural experiments, which offer researchers future opportunities for sophisticated quasi-experimental time-series studies that provide a strong basis for assessing the causal public health impact of law. The role of law in establishing, empowering, and constraining public health agencies has long been a matter of interest to legal scholars and health practitioners (Gostin, 2008). Legal infrastructure of state and local health agencies remains almost entirely a matter of state law (statute) although the Federal government's role has been steadily increasing (Grad, 2005). State mandated reports on behalf of health professionals make up a significant portion of all maltreatment reports and contribute to increased substantiation of these reports as compared to nonprofessionals. Most research focuses on differences between nonspecific professionals and nonprofessionals mandated to report suspected child abuse and neglect and often does not account for the timing of policy implementation. Utilizing Difference-in-Difference (DiD) methods to estimate mean causal effects has long been used by econometricians as a gold standard method to evaluate policies and other applied work (Callaway & Sant 'Anna, 2020; Goodman-Bacon, 2021). Policy makers in the U.S. states and its territories have a responsibility for identifying and implementing their own

interdisciplinary child welfare systems, while using federal laws and regulations as guidance, structure, and funding regarding child welfare policies and public health practices (CWIG, 2017; Wagenaar & Burris, 2013).

The current study addresses the weaknesses of past work by stretching beyond cross-sectional data to incorporate national archival data that can account for the timing of policy change into our analyses and aided in our ability to make stronger conclusions. This methodology allowed us to examine the average change associated with implementing the policy in a given U.S. state between the study review period by accounting for the year in which specific policies were implemented in the U.S. Time and state invariant factors known to influence substance use (e.g., alcohol and drug policies; excise taxes) and child maltreatment were controlled for in analyses. Focusing on the efficacy of substance abuse counselor mandates specifically aids in informing the utility of implementing specific mandated reporting policies amongst professionals who are disproportionately involved in child maltreatment cases across the U.S. No known work has focused on the effects of implementing mandated reporting policies amongst substance abuse counselors despite substantial risk that substance abuse poses amongst caregivers regarding increased risk of engaging in harsher parenting techniques (e.g., corporal punishment), having poor affect and impulse control, and probable child maltreatment.

The present study utilized administrative data, which although difficult to access, have been used for several decades to combat this challenge, particularly as it relates to child welfare research and policy formulation and evaluation (American Psychological Association [APA], 1979; Brownell & Jutte, 2013; English, Brandford, & Coghlan, 2000; Johnson-Reid & Drake, 2008). Administrative databases (ADBs) pertain to agency records that are routinely collected and are a necessary component of surveillance and policy development and evaluation (Johnson-

Reid & Drake, 2008; Roos & Shapiro, 1999). Such databases, including legal and maltreatment data, often from CPS agencies, provide an important opportunity for child maltreatment prevention and intervention, as they provide an extensive, cost-effective, and systematic way in which to monitor reported child abuse and neglect (Brownell & Jutte, 2013; Johnson-Reid & Drake, 2008; Yampolskaya & Banks, 2006). Child maltreatment type categorizations in NCANDS are based on federal guidelines for evidence of one or more instances of abuse (i.e., emotional, physical, sexual) and neglect (i.e., emotional, physical, medical) (Paulsci, Vandervort, & Lewis, 2016; USDHHS, 2002). Because NCANDS federal guidelines cannot account for all variation in state-level interpretations and definitions of child abuse and neglect, state-level differences were noted. Another methodological strength related to the use of a large administrative dataset surrounds generalizability. Demographic characteristics suggest that the present sample consisted of several million CPS reports impacting millions of children and adolescents in the U.S. population. However, it should be noted that suspected child abuse and neglect remains underreported in the U.S.

Limitations

There are limitations to the current study. First, it is important to acknowledge that while the quasi-experimental nature of the design is a methodological strength, study conditions already existed, and data were collected across longitudinal timepoints (Tabachnick & Fidell, 2019). Second, although working with big administrative data has several advantages, poor availability of legal data has been identified as a general challenge to empirical health law research (Mello & Zeiler, 2008). Third, despite being well-powered, our model did not indicate a good fit and was likely impacted by factors specific to aggregating data from a federal database.

The present study aimed to analyze outcomes informed by federal and state policy that are based on legal definitions of child abuse and neglect. We further attempted to address these disparities by utilizing NCANDS, which uses federal definitions for all categorizations of reported abuse and neglect and allowed for comparisons across states. However, it is important to consider that legal definitions at the state-level are often more detailed and dictate what is put into federal databases. Utilizing a federal database, such as NCANDS, was both a strength and a limitation, due to several between and within-state differences in CPS agencies definitions, coding, and investigation protocol, as well as significant changes and variations in NCANDS protocols across years, limiting the ability to make strong conclusions related to policy efficacy. Although careful examination of state-level differences in policy implementation were identified and documented, due to the nature of these data, there are likely potential errors related to measurement issues and variations surrounding state-level definitions of how substance abuse counselors are defined.

One such limitation surrounds the DAST-10 substance abuse measure. The DAST-10, which measures problematic drug use. The DAST-10 is the only known measure that is reportedly adopted by some state CPS agencies to assess caregiver substance abuse. Further, there is little available data regarding state-level CPS agencies' procedures related to investigations, including how substance abuse is defined and measured, contributing to possible errors. This measure also excludes questions pertaining to alcohol and tobacco use, and instead focuses only on illicit substances (e.g., crystal methamphetamine; cocaine) and excessive or nonmedical use of prescription and over-the-counter medications (e.g., opiates) (McCabe et al., 2006; Skinner, 1982). The exclusion of alcohol, especially, may have resulted in an underrepresentation of problematic drug use, since alcohol is among the most prevalent drugs

abused by caregivers (Frazier et al., 2005; McCabe et al., 2006; USDHHS, 2021). Measures of substance use, like the DAST-10 are also face-valid, which also could have resulted in underreporting of drug use behaviors due to response bias, particularly within the context of a formal CPS investigation that has potential familial, legal, and financial consequences.

Additionally, as all data were based on self-or other report to a CPS or associated agency and later compiled and aggregated and compiled to NCANDS Child File data, this multi-step nature of reporting may have contributed to missingness or response bias in coding and compiling data. In particular, the validity of CPS policies and protocols assessing child maltreatment through self-report has been questioned by some researchers. However, Koss and Gidycz (1985) dispelled these concerns by finding a large positive correlation of .73 (p <.001) between self-reports of sexual victimization and responses told to an interviewer months apart. There was also evidence of systematic missingness for certain variables, such as the NCANDS variable substance abuse-related services, which impacted the ability to analyze Hypotheses 1C and 2C. This wasn't apparent until preparation and aggregation of this data for preliminary analyses.

Lastly, the present study focused on the DiD study methodology, which assumes that any potential changes in the outcome variables (i.e., child maltreatment reporting dispositions; reports involving substance abuse; and reports involving substance abuse-related services) are due to the implementation of mandatory reporting policies at the state-level. This methodology also assumes that mandatory reporting polices, and study outcomes are not correlated with unobserved factors contained in the error term. This conservative approach and research design is both a strength and potential limitation in the current study, as the DiD methodology does not consider nuances in the preparation, compilation, and aggregation of the data, such as extensive

state-to-state variation in definitions, reporting, and categorizations of child maltreatment. It is also possible that bias in Hypothesis 1B was introduced because our substance abuse outcome variable has significant overlap with substance abuse counselors (predictor variable).

Policy Implications and Future Directions

Large-scale, longitudinal, and comparable data are necessary to understand and address key issues pertaining to child maltreatment surveillance, prevention, and intervention (Kenny et al., 2017). The National Child Abuse and Neglect Data System is the only known national database of child maltreatment and is rarely used for research amongst psychologists. Currently, most mandatory reporting policies put in place for the prevention and intervention of child abuse and neglect have unknown effectiveness among those families identified by CPS (Baer et al., 2001; Vladutiu, Martin, & Macy, 2011). For some professionals there may be an association that could inform more efficacious policies. Continued child maltreatment identification and prevention efforts are vital and ongoing, though the efficacy of most policies targeted at child abuse and neglect prevention and intervention efforts are rarely evaluated (CDC, 2016; Vladutiu et al., 2011).

In addition to continuing intervention efforts, future work may benefit from evaluating the efficacy of existing CPS investigation protocols and suggested interventions, in addition to collecting data on comorbid health risks to better inform future mandated reporting policies, trainings, and interventions. Specifically, future research efforts are needed to develop effective strategies for improving the efficacy of investigations of child maltreatments health-risk prevention interventions for those who have recently been sexually assaulted or identified by CPS, the local police departments, or the Federal Bureau of Investigation (FBI).

Policy Implications

While this study aimed to contribute to both psychology and the field of public health law research (PHLR), there is little relevant research merging these topics. Most of these results do not align with existing research suggesting that health professionals who are mandated to report, particularly those who have training on child abuse and neglect are more likely to accurately identify cases of child maltreatment (Kenny et al., 2017; Starling et al., 2009). Reporting policies are typically associated with increased detection of child maltreatment, though mandating health professionals to report in the absence of training has also been linked to overreporting of suspected abuse and neglect, and a rise in unsubstantiated reports (Mathews, 2014; Regis, 2012; Wallace et al., 2007). Findings of this study indicate that there was no evidence of systematic differences in mandatory reporting outcomes based on the implementation of specific (i.e., substance abuse counselor) or non-specific (i.e., any health professionals) mandated reporting policies. It should be noted that this null outcome can still provide policy makers with important information. This outcome suggests that requiring specific health professionals to report suspected child maltreatment may not be an efficacious policy or beneficial use of state and federal resources, as the mandates did not impact CPS substantiation or indication, or caretaker substance abuse. It is also possible that there was underreporting of suspected child maltreatment all along. This challenges existing literature which has suggested that mandated reporting leads to more reports and thus requires greater resources to be put toward CPS investigations into whether reports are substantiated and indicated or unsubstantiated. A contributing factor to underreporting may relate to possible clinical consequences surrounding mandated reporting to CPS, such as expected harm or rupture of the therapeutic relationship between client and

counselor following making a report, and the potential of making a CPS report being counterproductive to treatment progress.

Future Directions

Examining the efficacy of best practice clinical techniques and using those techniques to create future child maltreatment reporting policies may help reduce harm to children and families (Ibrahim et al., 2011; Lechner, 2010). Increased use of quasi-experimental and DiD research design elements may strengthen the validity of future child maltreatment studies. The extent to which individual staff and particular health agencies understand and use the law, and under what circumstances that occurs, is a gap in the existing literature on policy innovation within health departments (Ibrahim et al., 2011). It is recommended that multidisciplinary researchers attempt to address the limitations of the current study, such as investigating child-level data and between-state differences. Additionally, it is recommended that this study be replicated using newly available national child maltreatment data (i.e., FFY 2016 – 2020 NCANDS Child Files; State Child Abuse and Neglect (SCAN) Policies Database) and different mandatory reporting policies. For instance, it would be interesting to examine the impact of such policies amongst more streamlined and specialized health professionals, such as clinical psychologists. Reliable and valid measurements of legal concepts are also important for advancing evaluation of public health effects of law. Future studies should also focus on improving standards for defining and collecting coded legal data, and utilizing high quality, publicly available datasets.

Potential barriers to reporting, such as overburdened CPS workers, further traumatizing children during their investigation, and spending needless resources on ineffective policies may also be the result of how the law is implemented and enforced, rather than a policy effect. For instance, in recent years, U.S. states adopting Anti-Trans youth laws (e.g., Alabama and Florida

pass ‘bathroom bills’ as well as statutes banning Trans youth participation in sports; Oklahoma banned gender affirming care for Trans youth) have exponentially increased across the country despite extensive multidisciplinary research demonstrating the risk and potential harm of such practices to this vulnerable population.

The legal term *parens patriae* refers to the government’s role in protecting those that are unable to protect themselves and is often applied to children or dependent adults when parents or caretakers fail to provide proper care (Gostin & Wiley, 2016; Pisciotta, 1982; Rendleman, 1971; Runyan, 2015). This responsibility often falls to overburdened CPS and social workers, whose perceived lack of knowledge regarding recognition of child abuse and neglect is identified as a significant barrier to health professionals’ reporting of suspected maltreatment self-reported by health professionals (Pietrantonio et al., 2013). Yet, there are currently no federal statutes designating standards for training professionals mandated to report suspected child maltreatment (Kenny et al., 2017; Pietrantonio et al., 2013).

As state and local agencies use various models of shared governance, a real-time evaluation of the performance of health agencies and associated effects on population health is needed (Deville, 2009). The role of state and local health agencies in the development of and advocacy for new health laws is another area that generates interest, though includes minimal empirical research. For instance, corporal punishment remains legal in 19 U.S. states despite extensive multidisciplinary research demonstrating the negative impact that such behaviors have on children and adolescents, and many efforts from advocates to amend or abolish such statutes. Another unfortunate statistic is that only seven states prohibit child marriage despite similarly established research across disciplines highlighting the negative impact of allowing caregivers to marry their children. Of the 43 U.S. states permitting child marriage, eight states do not have any

policies or minimum age requirement. Similarly, state policies such as Skylar's Law in West Virginia, which modified Amber Alert protocols in 2013 following the death of a missing adolescent, tend to be reactionary because of tragedy and National media coverage and attention rather than based on systematic evaluation and best practice.

CHAPTER V

CONCLUSIONS

This study aimed to contribute to both psychology and the field of public health law research by examining the impact of implementing mandated reporting policies among substance abuse counselors on child maltreatment outcomes. While there is much future work to be done in this domain, this study contributes to our current understanding of specific mandatory reporting requirements on child maltreatment reporting outcomes by means of providing the first known examination of the subsequent impact of implementing reporting policies among mandated substance abuse counselors. Findings did not indicate a higher likelihood of substantiated or indicated CPS reports when and in the states where substance abuse counselors, or any health professionals are mandated to report suspected child abuse or neglect, suggesting that the implementation of these policies was not associated with change in the reporting and disposition (i.e., substantiation) of CPS reports amongst an extensive, national sample. However, it is important to consider various limitations impacting our ability to make strong conclusions about the impact of requiring certain professionals to report suspected child maltreatment. These include the national database not being sensitive to the extensive state-to-state and other differences in CPS agency coding and reporting. There also may have been systematic underreporting or overreporting prior to and after the implementation of mandated reporting policies, thus outcomes were not significantly impacted by these policies. Taken together, the present findings do not necessarily point to a benefit or drawback of requiring health professionals to report, but instead, highlight the importance of considering between and within state and other differences that could impact researchers' ability to accurately evaluate current and future policy and training efforts.

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APPENDIX A

NATIONAL CHILD ABUSE AND NEGLECT DATA SYSTEM CODEBOOK

CHILD FILE VARIABLES ORDERED BY NAME

VAR	*VARIABLE NAME*	*VARIABLE LABEL*	*VARIABLE GROUP*
66	Adopt	Adoption Services	Services Provided
144	AFCARSID	AFCARS ID	Child Data
67	CaseMang	Case Management Services	Services Provided
36	CdAlc	Alcohol Abuse-Child	Child Risk Factors
43	CdBehav	Behavior Problem-Child	Child Risk Factors
37	CdDrug	Drug Abuse-Child	Child Risk Factors
39	CdEmotnl	Emotionally Disturbed-Child	Child Risk Factors
41	CdLearn	Learning Disability-Child	Child Risk Factors
44	CdMedicl	Other Medical Condition-Child	Child Risk Factors
42	CdPhys	Physically Disabled-Child	Child Risk Factors
38	CdRtrd	Mental Retardation-Child	Child Risk Factors
40	CdVisual	Visually Or Hearing Impaired-Child	Child Risk Factors
23	CEthn	Child Ethnicity	Child Data
15	ChAge	Child Age At Report	Child Data
4	ChID	Child ID	Child Data
24	ChLvng	Living Arrangement	Child Data
27	ChMal1	Maltreatment-1 Type	Child Maltreatment Data
29	ChMal2	Maltreatment-2 Type	Child Maltreatment Data
31	ChMal3	Maltreatment-3 Type	Child Maltreatment Data
33	ChMal4	Maltreatment-4 Type	Child Maltreatment Data
25	ChMil	Military Family Member	Child Data
26	ChPrior	Prior Victim	Child Data
17	ChRacAI	Child Race Amer Indian or Alaska Native	Child Data
18	ChRacAs	Child Race Asian	Child Data
19	ChRacBl	Child Race Black or African American	Child Data
20	ChRacNH	Race Hawaiian or Other Pacific Islander	Child Data
22	ChRacUd	Child Race Undetermined	Child Data
21	ChRacWh	Child Race White	Child Data
16	ChSex	Child Sex	Child Data
65	CoChRep	Court-Appointed Representative	Services Provided
68	Counsel	Counseling Services	Services Provided
69	Daycare	Day Care Services-Child	Services Provided

70	Educatn	Educational and Training Services	Services Provided
71	Employ	Employment Services	Services Provided
72	FamPlan	Family Planning Services	Services Provided
60	FamPres	Family Preservation Services	Services Provided
59	FamSup	Family Support Services	Services Provided

VAR	*VARIABLE NAME*	*VARIABLE LABEL*	*VARIABLE GROUP*
45	FCAlc	Alcohol Abuse-Caretaker(s)	Caretaker Risk Factors
145	FCDchDt	Date of Discharge from Foster Care	Services Provided
46	FCDrug	Drug Abuse-Caretaker(s)	Caretaker Risk Factors
48	FCEmotnl	Emotionally Disturbed-Caretaker(s)	Caretaker Risk Factors
54	FCHouse	Inadequate Housing	Caretaker Risk Factors
50	FCLearn	Learning Disability-Caretaker(s)	Caretaker Risk Factors
52	FCMedicl	Other Medical Condition-Caretaker(s)	Caretaker Risk Factors
55	FCMoney	Financial Problem	Caretaker Risk Factors
51	FCPhys	Physically Disabled-Caretaker(s)	Caretaker Risk Factors
56	FCPublic	Public Assistance	Caretaker Risk Factors
47	FCRtrd	Mental Retardation-Caretaker(s)	Caretaker Risk Factors
53	FCViol	Domestic Violence	Caretaker Risk Factors
49	FCVisual	Visually or Hearing Impaired-Caretaker	Caretaker Risk Factors
61	FosterCr	Foster Care Services	Services Provided
73	Health	Health-Related and Home Health Services	Services Provided
74	Homebase	Home-Based Services	Services Provided
75	Housing	Housing Services	Services Provided
77	InfoRef	Information and Referral Services	Services Provided
9	InvDate	CPS Response Start Date	Report Data
10	InvStrTm	Investigation Contact Time	Report Data
63	JuvPet	Juvenile Court Petition	Services Provided
78	Legal	Legal Services	Services Provided
28	Mal1Lev	Maltreatment-1 Disposition Level	Child Maltreatment Data
30	Mal2Lev	Maltreatment-2 Disposition Level	Child Maltreatment Data
32	Mal3Lev	Maltreatment-3 Disposition Level	Child Maltreatment Data
34	Mal4Lev	Maltreatment-4 Disposition Level	Child Maltreatment Data
35	MalDeath	Maltreatment Death	Child Maltreatment Data
79	MentHlth	Mental Health Services	Services Provided
14	Notifs	Notifications	Report Data
86	OtherSv	Other Services	Services Provided
93	P1RacAI	Perp 1 Race Amer Indian or Alaska Native	Perpetrators Data
94	P1RacAs	Perpetrator-1 Race Asian	Perpetrators Data
95	P1RacBl	Perp-1 Race Black or African American	Perpetrators Data
96	P1RacNH	Perp-1 Race Hawaiian or Other Pac Island	Perpetrators Data
98	P1RacUd	Perpetrator-1 Race Undetermined	Perpetrators Data
97	P1RacWh	Perpetrator-1 Race White	Perpetrators Data
112	P2RacAI	Perp-2 Race Amer Indian or Alaska Native	Perpetrators Data

VAR	*VARIABLE NAME*	*VARIABLE LABEL*	*VARIABLE GROUP*
113	P2RacAs	Perpetrator-2 Race Asian	Perpetrators Data
114	P2RacBl	Perp-2 Race Black or African American	Perpetrators Data
115	P2RacNH	Perp-2 Race Hawaiian - Pacific Islander	Perpetrators Data
117	P2RacUd	Perpetrator-2 Race Undetermined	Perpetrators Data
116	P2RacWh	Perpetrator-2 Race White	Perpetrators Data
131	P3RacAI	Perp-3 Race Amer Indian or Alaska Native	Perpetrators Data
132	P3RacAs	Perpetrator-3 Race Asian	Perpetrators Data
133	P3RacBl	Perp-3 Race Black or African American	Perpetrators Data
134	P3RacNH	Perp-3 Race Hawaiian - Pacific Islander	Perpetrators Data
136	P3RacUd	Perpetrator-3 Race Undetermined	Perpetrators Data
135	P3RacWh	Perpetrator-3 Race White	Perpetrators Data
91	Per1Age	Perpetrator-1 Age at Report	Perpetrators Data
90	Per1Cr	Perpetrator-1 As A Caretaker	Perpetrators Data
99	Per1Ethn	Perpetrator-1 Ethnicity	Perpetrators Data
87	Per1ID	Perpetrator-1 ID	Perpetrators Data
102	Per1Mal1	Perpetrator-1 Maltreatment-1	Perpetrators Data
103	Per1Mal2	Perpetrator-1 Maltreatment-2	Perpetrators Data
104	Per1Mal3	Perpetrator-1 Maltreatment-3	Perpetrators Data
105	Per1Mal4	Perpetrator-1 Maltreatment-4	Perpetrators Data
100	Per1Mil	Perpetrator-1 Military Member	Perpetrators Data
101	Per1Pior	Perpetrator-1 Prior Abuser	Perpetrators Data
89	Per1Prnt	Perpetrator-1 As A Parent	Perpetrators Data
88	Per1Rel	Perpetrator-1 Relationship	Perpetrators Data
92	Per1Sex	Perpetrator-1 Sex	Perpetrators Data
110	Per2Age	Perpetrator-2 Age At Report	Perpetrators Data
109	Per2Cr	Perpetrator-2 As A Caretaker	Perpetrators Data
118	Per2Ethn	Perpetrator-2 Ethnicity	Perpetrators Data
106	Per2ID	Perpetrator-2 ID	Perpetrators Data
121	Per2Mal1	Perpetrator-2 Maltreatment-1	Perpetrators Data
122	Per2Mal2	Perpetrator-2 Maltreatment-2	Perpetrators Data
123	Per2Mal3	Perpetrator-2 Maltreatment-3	Perpetrators Data
124	Per2Mal4	Perpetrator-2 Maltreatment-4	Perpetrators Data
119	Per2Mil	Perpetrator-2 Military Member	Perpetrators Data
120	Per2Pior	Perpetrator-2 Prior Abuser	Perpetrators Data
108	Per2Prnt	Perpetrator-2 As A Parent	Perpetrators Data
107	Per2Rel	Perpetrator-2 Relationship	Perpetrators Data
111	Per2Sex	Perpetrator-2 Sex	Perpetrators Data
129	Per3Age	Perpetrator-3 Age At Report	Perpetrators Data
128	Per3Cr	Perpetrator-3 As A Caretaker	Perpetrators Data

VAR	*VARIABLE NAME*	*VARIABLE LABEL*	*VARIABLE GROUP*
137	Per3Ethn	Perpetrator-3 Ethnicity	Perpetrators Data
125	Per3ID	Perpetrator-3 ID	Perpetrators Data
140	Per3Mal1	Perpetrator-3 Maltreatment-1	Perpetrators Data
141	Per3Mal2	Perpetrator-3 Maltreatment-2	Perpetrators Data
142	Per3Mal3	Perpetrator-3 Maltreatment-3	Perpetrators Data
143	Per3Mal4	Perpetrator-3 Maltreatment-4	Perpetrators Data
138	Per3Mil	Perpetrator-3 Military Member	Perpetrators Data
139	Per3Pior	Perpetrator-3 Prior Abuser	Perpetrators Data
127	Per3Prnt	Perpetrator-3 As A Parent	Perpetrators Data
126	Per3Rel	Perpetrator-3 Relationship	Perpetrators Data
130	Per3Sex	Perpetrator-3 Sex	Perpetrators Data
64	PetDate	Petition Date	Services Provided
57	PostServ	Post Investigation Services	Services Provided
80	PregPar	Pregnancy and Parenting Services	Services Provided
81	Respite	Respite Care Services	Services Provided
62	RmvDate	Removal Date	Services Provided
13	RpDispDt	Report Disposition Date	Report Data
5	RptCnty	County Of Report	Report Data
12	RptDisp	Report Disposition	Report Data
7	RptDt	Report Date	Report Data
6	RptFIPS	Derived: State/County FIPS Code	Report Data
3	RptID	Report ID	Report Data
11	RptSrc	Report Source	Report Data
8	RptTm	Report Time	Report Data
146	RptVictim	Derived: Child is a Victim on This Report	Derived by NDACAN
58	ServDate	Service Date	Services Provided
83	SSDelinq	Special Services-Juvenile Delinquent	Services Provided
82	SSDisabl	Special Services-Disabled	Services Provided
2	StaTerr	State or Territory	Report Data
84	SubAbuse	Substance Abuse Services	Services Provided
1	SubYr	Submission Year	Report Data
76	TransLiv	Independent and Transitional Living Svcs	Services Provided
85	Transprt	Transportation Services	Services Provided

APPENDIX B

APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

EASTERN VIRGINIA MEDICAL SCHOOL INSTITUTIONAL REVIEW BOARD

EVMS
Eastern Virginia Medical School

October 17, 2023

Andrew D Plunk, PhD
Department of Pediatrics
E.V. Williams Hall
855 West Brambleton Avenue
Norfolk, VA 23510

RE: IRB # 18-06-WC-0177

This form provides additional information to the *Continuing Review Report* that accompanies this letter. The continuing review form is the official document that confirms IRB review and type of approval and includes the IRB#, study title, IRB stamp that includes approval and expiration dates, and an appropriate chair, vice-chair or IRB member signature.

☒ Completed Continuing Review Form

☒ IRB Study Title: The Impact of Mandatory Substance Use Counselor Reporting Requirements on Child Maltreatment Reporting Outcomes
- Protocol: Version Date: Aug-15-2022

☒ No sponsor has been identified as providing funding for this study or project.

☒ Waiver of Consent continues to be justified using the following criteria:
- The research involves no more than minimal risk to the subjects
- The waiver will not adversely affect the rights and welfare of subjects
- The research could not practicably be carried out without the waiver or alteration
- Whenever appropriate, the subjects will be provided with additional pertinent information after they have participated in the study

☒ The Continuing Review was reviewed and approved by Scott Kruger, M.D., Chair of the 3rd Tuesday IRB, Eastern Virginia Medical School on **October 17, 2023**.

- **Child Risk Designated by Expedited Reviewer**
  This study using children does not involve greater than minimal risk and that adequate provisions have been made for soliciting the assent of the children, including permission of each subject's parent or guardian. [45CFR46.404]

☒ **Your new protocol expiration date is October 16, 2024. Please see the attached form for the due date of the next continuing review submission.**

☒ Please remember that prompt reporting to the IRB of proposed changes in a research activity (e.g., changes to the protocol, consent form(s), advertisements, or other study-related materials) is required. This includes information related to funding sources. In addition, the changes must be reviewed and approved by the EVMS IRB ***before*** the changes can be initiated *except* when it is necessary to eliminate apparent immediate hazards to the subject.

Remember that a copy of all correspondence relating to any site visit or regulatory visit must be submitted to the IRB office within five (5) days of receipt by the EVMS site. Refer to the *2022 EVMS IRB SOPs Section 22.0* for more information.

HUMAN SUBJECTS' PROTECTIONS PROGRAM
P.O. BOX 1980
NORFOLK, VA 23501-1980
TEL 757.446.8423
FAX 757.624.2275
www.evms.edu

Eastern Virginia Medical School (EVMS) has a Federalwide Assurance (FWA 00003956) from OHRP. The Institutional Review Boards (IRB 00000460 and IRB 00001345) are registered with OHRP and are in compliance with 45 CFR 46, 21 CFR 50, and 21 CFR 56.

Please reference the IRB number, principal investigator and study title in any correspondence regarding this protocol.

Thank you for your continued cooperation with the Institutional Review Board.

Sincerely,

Daniel M. Sullivan, PhD
Assistant Director, Human Subjects Protection Program

DMS/rls

APPENDIX C

NCANDS CODEBOOKS

VARIABLE CATEGORIZING AND CODING DIFFERENCES DURING STUDY REVIEW PERIOD

Outcome Variables:

Child maltreatment reporting dispositions

- Substantiated or indicated reports will be coded as "1" and all other dispositions (i.e., unsubstantiated, intentionally false, closed with no finding, other, alternative response victim, and alternative response non-victim*)* will be coded as "0" for the year in which the disposition was determined.
- According to the NCANDS child-file codebooks, this information is contained in the variable "report disposition."
- **2000:** corresponding variable is named "report disposition" as abbreviated by **"RptDisp;**" labeled element #10; coded 1-7 (i.e., Substantiated, Indicated or Reason to Suspect, Alternative Response Disposition - Victim, Alternative Response Disposition – Not a Victim, Unsubstantiated, Unsubstantiated due to Intentionally False Report, Closed – No Finding), respectively. Other coded 88; and Unknown or Missing coded 99.
- **2001:** corresponding variable is named "report disposition" as abbreviated by **"RptDisp;**" labeled element #10; coded 1-7 (i.e., Substantiated, Indicated or Reason to Suspect, Alternative Response Disposition - Victim, Alternative Response Disposition – Not a Victim, Unsubstantiated, Unsubstantiated due to Intentionally False Report, Closed – No Finding), respectively. Other coded 88;

and Unknown or Missing coded 99.

- **2002-2017:** corresponding variable is named "report disposition" as abbreviated by **"RptDisp;**" labeled variable #12; coded 1-7 (i.e., Substantiated, Indicated or Reason to Suspect, Alternative Response Disposition - Victim, Alternative Response Disposition – Not a Victim, Unsubstantiated, Unsubstantiated due to Intentionally False Report, Closed – No Finding), respectively. Other coded 88; and Unknown or Missing coded 99.
- **Differences in naming variables across codebooks:** N/A
- **Differences in coding variables across codebooks:** 2002-2017 codebook lists "RptDisp" as variable #12 instead of element #10 as per the 2000 and 2001 codebooks.

Child maltreatment reports involving substance abuse and related services

- Both substance abuse and substance abuse-related services will be coded as either a "0" or "1" based on whether CPS determined the presence of risk factor or substance abuse service in a given year.
- Data related to child maltreatment reporting outcomes involving substance abuse and involving substance abuse-related services are contained in the NCANDS variables, "alcohol abuse-caretaker(s)," and "drug abuse-caretaker(s)," and "substance abuse services," respectively.
- **2000:** corresponding variable are named "alcohol abuse-caretaker(s)," and "drug abuse-caretaker(s)," and "substance abuse services," as abbreviated by **"FcAlc;**" **"FcDrug;" and "SubAbuse"** labeled elements #45, #46, and #84; coded 1 or 2 (i.e., yes; no), respectively. Unknown or Missing coded 9.

- **2001:** corresponding variable are named “alcohol abuse-caretaker(s),” and “drug abuse-caretaker(s),” and “substance abuse services,” as abbreviated by **“FcAlc;**” **“FcDrug;” and “SubAbuse”** labeled elements #45, #46, and #84; coded 1 or 2 (i.e., yes; no), respectively. Unknown or Missing coded 9.
- **2002-2017: 2001:** corresponding variable are named “alcohol abuse-caretaker(s),” and “drug abuse-caretaker(s),” and “substance abuse services,” as abbreviated by **“FcAlc;**” **“FcDrug;” and “SubAbuse”** labeled variables #45, #46, and #84; coded 1 or 2 (i.e., yes; no), respectively. Unknown or Missing coded 9.
- **Differences in naming variables across codebooks:** N/A
- **Differences in coding variables across codebooks:** N/A

Covariates:

Caretaker risk factors

- Caretaker risk factors are identified by NCANDS as factors known to increase the likelihood of a caretaker abusing or neglecting children, and include the following as indicated in the codebooks: **Emotional disturbance; Domestic violence; Financial problem; Inadequate housing; Intellectual disability; Learning disability; Other medical condition; Physical disability; Public assistance; Visually or hearing impairment**
- Caretaker risk factors will be coded as either a “0” or “1” based on whether CPS determined the presence of risk factor in a given year.
- **2000:** corresponding variables are named “mental retardation-caretaker(s),” “emotionally disturbed-caretaker(s),” visually or hearing impaired-caretaker(s),”

learning disability-caretaker(s),” “physically disabled-caretaker(s),” other medical condition-caretaker(s),” domestic violence,” “inadequate housing,” “financial problem,” and “public assistance,” as abbreviated by **“FcRtrd;**” **“FcEmotnl;” “FcVisual;” “FcLearn;” “FcPhys;” “FcMedicl;” “FcViol;” “FcHouse;” “FcMoney;” and “FcPublic”** labeled elements #’s 45-54; coded 1 or 2 (i.e., yes; no), respectively. Unknown or Missing coded 9.

- **2001:** corresponding variables are named “mental retardation-caretaker(s),” “emotionally disturbed-caretaker(s),” visually or hearing impaired-caretaker(s),” learning disability-caretaker(s),” “physically disabled-caretaker(s),” other medical condition-caretaker(s),” domestic violence,” “inadequate housing,” “financial problem,” and “public assistance,” as abbreviated by **“FcRtrd;**” **“FcEmotnl;” “FcVisual;” “FcLearn;” “FcPhys;” “FcMedicl;” “FcViol;” “FcHouse;” “FcMoney;” and “FcPublic”** labeled elements #’s 45-54; coded 1 or 2 (i.e., yes; no), respectively. Unknown or Missing coded 9.
- **2002-2017:** corresponding variables are named “mental retardation-caretaker(s),” “emotionally disturbed-caretaker(s),” visually or hearing impaired-caretaker(s),” learning disability-caretaker(s),” “physically disabled-caretaker(s),” other medical condition-caretaker(s),” domestic violence,” “inadequate housing,” “financial problem,” and “public assistance,” as abbreviated by **“FCRtrd;**” **“FCEmotnl;” “FCVisual;” “FCLearn;” “FCPhys;” “FCMedicl;” “FCViol;” “FCHouse;” “FCMoney;” and “FCPublic”** labeled variable #’s 47-56; coded 1 or 2 (i.e., yes; no), respectively. Unknown or Missing coded 9.
- **Differences in naming variables across codebooks:** 2002-2017 codebook lists

caretaker risk factors (no change in actual variables) as variable #'s 47-56; instead of elements #'s 45-54 as per the 2000 and 2001 codebooks. Also, 2002-2017 capitalizes "FC" for all abbreviated caretaker risk factors; instead of "Fc" in the 2000 and 2001 NCANDS codebooks.

- **Differences in coding variables across codebooks:** N/A

Demographic characteristics

- The demographic data that will be in the final aggregated dataset will include the following: **the relationship of perpetrators to children involved, child/perpetrator age (at the time of the report), ethnicity, sex, whether a perpetrator has a prior abuse history, race, and type of child maltreatment.**
- Demographic factors will be recoded as follows: 1) addition of a single indicator for child and perpetrator minority race/ethnicity status (i.e., Non-Hispanic Caucasians vs. Other race/ethnicity vs. cases including both Non-Hispanic Caucasian and Other races/ethnicities); 2) dropping individual ages and adding categorical variables for oldest and youngest children (i.e., "0-2," "3-5", "6-8", "9-11", "12-15", "16-17" and "18+"); 3) addition of a separate variable for maltreatment type that will include either a "0" or "1" based on whether the particular type of maltreatment was included for any children in the report (i.e., physical abuse, neglect, medical neglect, sexual abuse, psychological or emotional maltreatment, no alleged maltreatment, other, and unknown or missing).
- Perpetrator prior abuse history will be coded as either a "0" or "1" based on whether CPS determined prior abuse. In reports involving multiple children and

perpetrators, a variable for the number of children involved will be added to record the number of children involved.

- **2000:** corresponding variables are named "perpetrator-1-relationship," "perpetrator-1-age at report," "perpetrator-1-sex," "perpetrator-1-Rac (i.e., American Indian or Alaskan Native; Asian; Black or African American; Pacific Islander; White; Undetermined), "perpetrator-1-hispanic ethnicity," "perpetrator-1-prior abuser," and "perpetrator-1-maltreatment-1," as abbreviated by **"Per1Rel;**" **"Per1Age;" "P1RacAL;" "P1RacAs;" "P1RacBL;" "P1RacNH;" "P1RacWh;" "P1RacUd;" "Per1Ethn;" "Per1Prior;" and "Per1Mal1"** labeled elements #'s, 90, 93, 94, 95, 96, 97, 98, 99, 100, 101, 103, 104.
- **Per1Rel** coded 1 - 7 (i.e., parent; other relative; foster parent; residential facility staff; child day care provider; unmarried partner of parent; legal guardian), respectively. Other is indicated by 88 and Unknown or Missing by 99. Labeled element #90.
- **Per1Age** coded as 18 (i.e., 18 years old or younger); 70 (i.e., 70 years old or younger); and 99 (i.e., unknown or missing). Labeled element #93.
- **P1Rac** coded as 1 (i.e., yes); 2 (i.e., no); 3 (i.e., unable to determine); or 9 (i.e., unknown or missing) for all listed races. Labeled elements #s 95-100.
- **Per1Ethn** coded as 1 (i.e., yes, Hispanic or Latino); 2 (i.e., not Hispanic or Latino); 3 (i.e., unable to determine); or 9 (i.e., unknown or missing). Labeled element #101.
- **Per1Prior** coded as 1 (i.e., yes); 2 (i.e., no); or 9 (i.e., unknown or missing) for prior abuser. Labeled element #103.

- **Per1Mal1** coded as 1 (i.e., yes); 2 (i.e., no). Labeled element #104.
- **2001:** corresponding variables are named "perpetrator-1-relationship," "perpetrator-1-age at report," "perpetrator-1-sex," "perpetrator-1-Rac (i.e., American Indian or Alaskan Native; Asian; Black or African American; Pacific Islander; White; Undetermined), "perpetrator-1-hispanic ethnicity," "perpetrator-1-prior abuser," and "perpetrator-1-maltreatment-1," as abbreviated by **"Per1Rel;**" **"Per1Age;" "P1RacAL;" "P1RacAs;" "P1RacBL;" "P1RacNH;" "P1RacWh;" "P1RacUd;" "Per1Ethn;" "Per1Prior;" and "Per1Mal1"** labeled elements #'s, 90, 93, 94, 95, 96, 97, 98, 99, 100, 101, 103, 104.
- **Per1Rel** coded 1 - 7 (i.e., parent; other relative; foster parent; residential facility staff; child day care provider; unmarried partner of parent; legal guardian), respectively. Other is indicated by 88 and Unknown or Missing by 99. Labeled element #90.
- **Per1Age** coded as 18 (i.e., 18 years old or younger); 70 (i.e., 70 years old or younger); and 99 (i.e., unknown or missing). Labeled element #93.
- **P1Rac** coded as 1 (i.e., yes); 2 (i.e., no); 3 (i.e., unable to determine); or 9 (i.e., unknown or missing) for all listed races. Labeled elements #s 95-100.
- **Per1Ethn** coded as 1 (i.e., yes, Hispanic or Latino); 2 (i.e., not Hispanic or Latino); 3 (i.e., unable to determine); or 9 (i.e., unknown or missing). Labeled element #101.
- **Per1Prior** coded as 1 (i.e., yes); 2 (i.e., no); or 9 (i.e., unknown or missing) for prior abuser. Labeled element #103.
- **Per1Mal1** coded as 1 (i.e., yes); 2 (i.e., no). Labeled element #104.

- **2002-2017:** corresponding variables are named “perpetrator-1-relationship,” “perpetrator-1-age at report,” “perpetrator-1-sex,” “perpetrator-1-Rac (i.e., American Indian or Alaskan Native; Asian; Black or African American; Pacific Islander; White; Undetermined), “perpetrator-1-hispanic ethnicity,” “perpetrator-1-prior abuser,” and “perpetrator-1-maltreatment-1,” as abbreviated by **“Per1Rel;**” **“Per1Age;” “P1RacAL;” “P1RacAs;” “P1RacBL;” “P1RacNH;” “P1RacWh;” “P1RacUd;” “Per1Ethn;” “Per1Prior;” and “Per1Mal1”** labeled variable #’s, 88, 91, 92, 93, 94, 95, 96, 97, 98, 99, 101, and 102.
- **Per1Rel** coded 1 - 7 (i.e., parent; other relative; foster parent; residential facility staff; child day care provider; unmarried partner of parent; legal guardian), respectively. Other is indicated by 88 and unknown or missing by 99. Labeled variable #88.
- **Per1Age** coded as 18 (i.e., 18 years old or younger); 70 (i.e., 70 years old or younger); and 99 (i.e., unknown or missing). Labeled variable #91.
- **P1Rac** coded as 1 (i.e., yes); 2 (i.e., no); 3 (i.e., unable to determine); or 9 (i.e., unknown or missing) for all listed races. Labeled variable #’s 93-98.
- **Per1Ethn** coded as 1 (i.e., yes, Hispanic or Latino); 2 (i.e., not Hispanic or Latino); 3 (i.e., unable to determine); or 9 (i.e., unknown or missing). Labeled variable #99.
- **Per1Prior** coded as 1 (i.e., yes); 2 (i.e., no); or 9 (i.e., unknown or missing) for prior abuser. Labeled element #101.
- **Per1Mal1** coded as 1 (i.e., yes); 2 (i.e., no). Labeled variable #102.
- **Differences in naming variables across codebooks:** N/A

- **Differences in coding variables across codebooks:** 2002-2017 codebook lists caretaker risk factors (no change in actual variables) as variable #'s 88, 91, 92, 93, 94, 95, 96, 97, 98, 99, 101, and 102; instead of elements #'s 90, 93, 94, 95, 96, 97, 98, 99, 100, 101, 103, and 104 as per the 2000 and 2001 codebooks.

Length of reporting process

- A time to final disposition variable will be constructed based on **the report date, investigation contact time, and report disposition date** included in NCANDS codebooks.
- **2000:** corresponding variables are named "report date;" "investigation start date;" and "report disposition date," as abbreviated by **"RptDt;" "InvDate;" and "RpDispDt"** labeled elements #7, #8, and #11, respectively.
- **RptDt** coded as 8 (i.e., days 1 through 15), or 23 (i.e., days 16 through 31). Year of CPS report included in its entirety (e.g., 2007). Element #7.
- **InvDate** coded as the month, day, and year in which the CPS investigation began. For example, 04/22/2012. Element #8.
- **RpDispDt** coded as the month, day, and year in which a decision was made by CPS regarding disposition of a report or investigation of alleged child maltreatment. Element #11.
- **2001:** corresponding variables are named "report date;" "investigation start date;" and "report disposition date," as abbreviated by **"RptDt;" "InvDate;" and "RpDispDt"** labeled elements #7, #8, and #11, respectively.
- **RptDt** coded as 8 (i.e., days 1 through 15), or 23 (i.e., days 16 through 31). Year of CPS report included in its entirety (e.g., 2007). Element #7.

- **InvDate** coded as the month, day, and year in which the CPS investigation began. For example, 04/22/2012. Element #8.
- **RpDispDt** coded as the month, day, and year in which a decision was made by CPS regarding disposition of a report or investigation of alleged child maltreatment. Element #11.
- **2002-2017: 2001:** corresponding variables are named "report date;" "report time;" and "report disposition date," as abbreviated by **"RptDt;" "RptTm;" and "RpDispDt"** labeled variables #7, #8, and #13, respectively.
- **RptDt** coded as 8 (i.e., days 1 through 15), or 23 (i.e., days 16 through 31). Year of CPS report included in its entirety (e.g., 2007). Variable #7.
- **RptTm** coded as the hour and minute when CPS was notified of suspected child maltreatment. Times are in 24-hour format and are rounded to the nearest hour, reported on the half-hour. For example, 15:30 means between 3:00 PM and 3:59 PM. Variable #8.
- **RpDispDt** coded as the month, day, and year in which a decision was made by CPS regarding disposition of a report or investigation of alleged child maltreatment. Variable #13.
- **Differences in naming variables across codebooks:** 2000 and 2001 codebooks both utilize **InvDate (Element #8)** to indicate the month, day, and year in which the CPS investigation began. The 2002-2017 codebook does not have this variable. Instead, there is a **RptTm (Variable #8)** that indicates the time in which a report of suspected child maltreatment was made to CPS.
- **Differences in coding variables across codebooks:** 2002-2017 codebook lists

coding variables as variable #'s 7, 8 and 13; instead of elements #7, #8, and #11 as per the 2000 and 2001 codebooks.

Bilgé Yilmaz, M.S.
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Virginia Consortium Program in Clinical Psychology
Old Dominion University
Norfolk, VA 23508

CURRICULUM VITAE

EDUCATION

Ph.D. — **Virginia Consortium Program in Clinical Psychology**, *Norfolk, VA;* University-based, APA accredited program, jointly sponsored by: Eastern Virginia Medical School (EVMS), Norfolk State University (NSU), and Old Dominion University (ODU)
Clinical Psychology, expected fall 2023
Dissertation Title: *The impact of mandatory substance abuse counselor reporting requirements on child maltreatment reporting outcomes*
Defended: November 2023
Chair: Kelli England, Ph.D.

M.S. — **Old Dominion University**, *Norfolk, VA*
Psychology, conferred December 2017
Thesis Title: *Adult sexual abuse, disordered eating behaviors, and substance abuse: The role of internalized shame and maladaptive coping strategies*
Defended: November 2017
Co-Chairs: Kelli England, Ph.D. & Robin J. Lewis, Ph.D.

B.A. — **University of Hawaii**, *Oahu, HI*
Psychology, conferred May 2012
Advisor: Janet Latner, Ph.D.

RESEARCH INTERESTS

- Prevention of child abuse and neglect and promotion of efficacious policies
- Trauma and Health-Risk Behaviors

Selected Publications and Presentations

Galán, C., Tung, I., **Yilmaz, B**., Tervo-Clemmens, B., Boness, C., Moses, J., McPhee, J., Bowdring, M., Call, C., Northup, J., Rupert, P., Vanwoerden, S., Womack, S., Sequeira, S., & Hails, A. (2021**)**. (accepted as editorial). Clinical science: A call to action. *Journal of Clinical Child and Adolescent Psychology*

Yilmaz, B., England, K.J. (2017, April). *Sexual abuse, disordered eating behaviors, and substance abuse: The mediating role of internalized shame and maladaptive coping strategies.* Paper presented at the 2017 Works in Progress: A Regional Interdisciplinary Conference of Feminist Scholarship, Norfolk, VA.

Robbins, A. T., **Yilmaz, B.,** Kelley, M. L., Hollis, B., & Bravo, A. (2016, November). *Moral injury as a mediator between combat and facets of hazardous drinking among U.S. military personnel and veterans.* Poster presented at the annual meeting of the International Society of Traumatic Stress Studies, Dallas, TX.