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Gordon Le Date

Examining the Association between Census-tract Level Eviction Filings and Child Maltreatment Reports in Metro Atlanta during the COVID-19 Pandemic

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An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Abstract

Examining the Association between Census-tract Level Eviction Filings and Child Maltreatment Reports in Metro Atlanta during the COVID-19 Pandemic

By Gordon Le

Background. The COVID-19 pandemic has placed millions of renters at risk of eviction, posing a great threat to children, families, as well as public health and social service systems. CDC and county-related eviction moratoriums protected families from being removed from their homes, however, it has not stopped eviction filings. The purpose of this study is to examine the relationship between filings and maltreatment reports in Georgia as well as the impact of the CDC eviction moratorium on this relationship.

Methods. Eviction filing and maltreatment report data from DeKalb and Fulton County between May and December 2020 were aggregated to the census tract level, rates for both measures were calculated (eviction filings per 100 occupied housing units and reports per 1000 children ages 0-18). American Community Survey data from 2015 and 2019 provided tract-level estimates of demographic and socioeconomic characteristics and were evaluated as confounders. A negative binomial mixed effects model was used to assess the relationship between tract-level eviction filing rate and maltreatment report rate. Analyses also assessed the impact of the eviction moratorium through an interaction term.

Results. Accounting for census-tract level covariates and random effects, there was a positive association between eviction filing rates and total maltreatment report rates in DeKalb and Fulton County. Additionally, there was a positive association between eviction filing rates and substantiated maltreatment report rates. The CDC eviction moratorium did not affect these relationships.

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Literature Review

Child Abuse and Neglect

Children are shaped by their early experiences, making childhood and adolescence a critical period for development. Establishing safe, healthy, and stable relationships and environments are important to promoting healthy outcomes (Crouch et al., 2018; Brown & Shillington, 2017; Sege & Harper Browne, 2017). Conversely, exposure to early childhood adversity and negative experiences such as child abuse and neglect can have a long-lasting impact across an individual's lifespan, affecting future outcomes such as health, behavior, and opportunity.

The risk factors for child maltreatment – defined in this review as abuse and neglect that occurs to children under 18 years of age – are numerous, many of which are covered in the Building Community Resilience framework (Ellis & Dietz, 2017). This evidence-based model highlights the longstanding web of adverse community experiences that place children at greater risk of abuse or neglect, emphasizing the need for researchers and policy makers to focus on the social determinants of health (SDOH) that severely hamper child well-being. For example, a meta-analysis found that the spectrum of social determinants of health (SDOH) such as poverty, racism, parental educational attainment, food insecurity, and lack of health insurance were associated with child maltreatment (Hunter & Flores, 2021). This strong link suggests that there should be an urgent priority to routinely screen families for SDOH to address identified SDOH with referrals to the appropriate services. The purpose of this study is to examine housing instability as a factor that influences child maltreatment, particularly in the context of the coronavirus pandemic.

Child maltreatment remains a significant global public health issue, affecting hundreds of millions of children each year. In 2019, there were 4.4 million child maltreatment referral reports involving the alleged maltreatment of 7.9 million children documented in the United States (U.S. Department of Health & Human Services, 2021). Unfortunately, about 18 percent of school students will have already been a subject of a formal Child Protective Services (CPS) investigation by the time they reach third grade (Ryan et al., 2018). Studies have shown that race may play a role in differences in maltreatment rates. Almost four in ten children experience some form of maltreatment by the time they reach adulthood[1], with African American children having the highest rate (53 percent) (Kim et al., 2017). Disproportional representation of ethnic minority children may be partly explained by disproportional residence in high poverty areas. Families of color and impoverished families are especially likely to be subjects of investigation for CPS (Berger & Waldfogel, 2011), and child maltreatment reports are spatially concentrated in neighborhoods of color and high-poverty neighborhoods (Fong, 2019). Although studies have found poverty to be the mediating factor between race and maltreatment (Maguire-Jack et al., 2015; Kim & Drake, 2018), it's important to acknowledge that the history of racial segregation displaced families into economically- and resource-deprived neighborhoods to begin with, which is further explained later.

Child abuse and neglect has been linked to a variety of short- and long-term consequences, including poorer mental health outcomes. One study in 2004 found that nearly half of children ages 2 to 14 who were investigated by child welfare agencies after reported maltreatment had clinically significant emotional or behavioral problems (Burns et al., 2004). Another study in 2000 found that children ages 5-9 recruited from pediatric practices were

[1]Throughout this report, adulthood is defined as individuals at least 18 years of age.

almost 3 times more likely to be diagnosed with an internalizing or externalizing disorder if they were a possible subject of child abuse (Briggs-Gowan et al., 2000). In addition, physical abuse, neglect, and emotional abuse during childhood were significantly associated with both internalizing behavior – behaviors that are directed towards oneself such as social withdrawal and feelings of loneliness – and externalizing behavior – behaviors that are directed towards others such as aggression and vandalism – at age 14 (Mills et al., 2013). Maltreatment also places individuals at an increased risk for engaging behaviors in adolescence such as substance use (Topitzes et al., 2010; Bellis et al., 2014; Dube et al., 2003; Huang et al., 2011), sexual risk behavior (Thompson et al., 2017; Senn & Carey, 2010), and delinquency (Stouthamer-Loeber et al., 2001; Williams et al., 2010).

Additionally, experiencing maltreatment during childhood is associated with an increased risk for experiencing further adversity in adulthood, such as increased rates of unemployment and poverty (Zielinski, 2009; Cherry & Wang, 2016). Adults with documented histories of maltreatment as children also have lower levels of education, lower income, fewer assets, and are more likely to engage in crime compared to adults with no history of maltreatment as children (Currie and Tekin, 2012; Currie and Widom, 2010). Maltreatment has also been found to have a dose response effect; one study found that an increase in the number of maltreatment reports was associated with an increased risk of experiencing at least one negative outcome in childhood or adulthood (Jonson-Reid et al., 2012).

Research has also shown that there is no significant difference in developmental outcomes for children with a substantiated child abuse and neglect case compared to children subject to an investigation but not substantiated (Hussey et al., 2005). In other words, as soon as an investigation begins, the child's health and well-being has already been impacted regardless

of whether abuse or neglect is confirmed. Children associated with maltreatment investigations score significantly lower on standardized exams, are more likely to be identified as needing special education, and are more likely to be held back at least one grade (Ryan et al., 2018).

The cost of child maltreatment is substantial. Estimates suggests that the crime induced by maltreatment costs society anywhere between $6.4 and $55 billion per year. The total direct cost for one victim's lifetime is approximately $830,928 for nonfatal maltreatment outcomes and $16.6 million for fatal maltreatment outcomes (in 2015 US dollars) (Peterson et al., 2018). According to one study, the lifetime economic burden – which considers both short- and long-term healthcare costs, productivity losses, child welfare costs, criminal justice costs, and special education costs – of child abuse and neglect in 2018 was nearly $3 trillion in the United States (Klika et al., 2020).

The Impact of COVID-19 on Child Maltreatment

The financial, mental, and physical stress adults and parents face due to coronavirus disease 2019 (COVID-19) can potentially lead to an increase in maltreatment reports. As a result of the pandemic, many families have experienced layoffs resulting in financial insecurity, concerns about employment stability, and the inability to receive social support from extended family and friends due to social distancing. Prior research has linked times of economic turmoil, such as the Great Recession, to an elevated risk for maltreatment (Schneider et al., 2017; Brooks-Gunn et al., 2013). Research on parental burnout, a chronic condition resulting from high levels of parenting-related stress, suggests that parents who experience burnout are more likely to engage in child abuse and neglect regardless of socioeconomic status (Crouch & Behl, 2001; Griffith, 2020; Mikolaczak et al., 2018). Studies have already found that parental stress due to

job loss and social isolation is associated with an increase in child maltreatment risk during the COVID-19 pandemic (Lee et al; 2020; Lawson et al., 2020; Rodriguez et al., 2021), and the consequences of the pandemic are more likely to have a larger impact on families of lower socioeconomic status (SES) compared to families of higher socioeconomic status. Furthermore, evidence from the United States, China, Brazil, France, Australia, and the United Kingdom indicates increases in violence towards children due to isolation and quarantine (Campbell, 2020; Peterman et al., 2020; Allen-Ebrahimian, 2020; Wagers, 2020; Bradbury-Jones & Isham, 2020; Kelly & Morgan, 2020). The data and evidence on parental adversity and child maltreatment points to the need for mental health access and support for families during unprecedented times, particularly when important sources of social support become unavailable.

In an effort to reduce and prevent the spread of COVID-19, most primary and secondary schools in the United States cancelled classes and transitioned to online learning for the end of the 2019 school year and continued throughout early 2021. However, this has led to concerns amongst researchers that the risk for the welfare of children will only increase, especially those living in low-income and crowded households (Teo & Griffiths, 2020). The pandemic may have created conditions to manifest a rise in children's experience of abuse and neglect, but such a rise might be blanketed given the drop in the mechanisms to track its incidence. More than 20 percent of the United States' maltreatment reports in 2018 came from teachers, guidance counselors, school psychologists, and other school workers. These professionals are all mandated reporters of suspected child maltreatment in every state, and their share of reports exceeded that of law enforcement officers, medical professionals, and social services staff (Administration for Child and Families, 2020). Teachers and school personnel spend a significant amount of time interacting with children and are the primary reporters of suspected maltreatment. With schools

closed as a public health response to the rapid spread of COVID-19, one can expect the number child maltreatment allegations to decline as a result. In the past, the attention to the well-being of children was regarded as inadequate during the H1N1 flu pandemic (Douglas et al., 2009; Murray, 2010), which warrants attention given the current situation we are facing with COVID-19.

A study in Florida found that the actual number of reported allegations was approximately 27 percent (15,000 reports) lower than expected for March 2020 and April 2020, a finding that was mainly attributed to school closures (Baron et al., 2020), highlighting the importance of school personnel as an important channel for child maltreatment reporting. When scaled up to the national level, this estimate translates to 212,500 unreported allegations during that two-month period. Significant decreases in child maltreatment reporting in March (29 percent lower than expected), April, and May 2020 (both months about 50 percent less than expected) were also documented in New York City (Rapoport et al., 2021). Nationwide, reports of child maltreatment in a period of 2020 were estimated to be 40 to 60 percent lower than in the same period in 2019 (Weiner et al., 2020). All these studies use different data and methods, but ultimately come to the same conclusion: potential victims of child abuse and neglect are being underreported because of school closures and stay-at-home orders. However, it may not necessarily mean that maltreatment has significantly increased during this time (Sege and Stephens, 2021).

It is clear that the pandemic has disrupted child welfare operations and highlighted the importance of the roles that schools and teachers play in the lives of children. In addition to the education system, other supports are needed to protect child well-being. Policy changes that address social determinants of health and promoting strategies that target community-level

stressors to prevent maltreatment from occurring in the first place should also be taken into consideration to address child abuse and neglect.

Evictions

Each year, millions of Americans are evicted or forced to leave their homes involuntarily, setting off a chain reaction of events that negatively impact an individual's health and well-being. The harmful effects of eviction – the act of expelling a tenant from a property – are numerous and includes housing instability, prolonged homelessness, unemployment, disruption in children's education, and mental illness (Gold, 2016; Crane & Warnes, 2010; Bartlett, 1999; Collinson & Reed, 2018).

Eviction laws and processes can vary from state to state, although the steps to eviction are common. The formal eviction process begins when a landlord finds a reason to evict a tenant, such as failing to pay rent, violating the lease agreement, damaging the property, or denying the landlord reasonable access to the property. The tenant is then served a notice to vacate the premises. If the tenant does not comply with the notice, the landlord may file an eviction case. A court hearing is held, and if the hearing favors the landlord, an order to execute the eviction is issue by the court. Some states require tenants to move out immediately after the order is issued, while others give tenants a few days to several months.

In a typical year, landlords file 3.7 million eviction cases, according to data retrieved by The Eviction Lab at Princeton University (Hepburn et al., 2020). Furthermore, between 2012 and 2016, an average of 1.9 million evictions were filed each year in metropolitan areas, with approximately 666 thousand evictions carried out. Most renters receiving eviction filings are often facing stressful economic circumstances. In fact, evictions typically impact Black and

Hispanic renters, low-income households, and households with children the most (Desmond, 2012a; Desmond et al., 2013; Desmond, 2015). Evictions are common in large metro areas, especially in minority low-income neighborhoods. An estimated 1 in 7 children born in large U.S. cities between 1998 and 2000 experienced at least one eviction before age 15, and most of these children came from disadvantaged backgrounds (Lundberg & Donnelly, 2018).

Eviction is likely to be socially stratified, according to Lundberg and Donnelly. Children who are already disadvantaged are more likely to be evicted. Eviction was most common among children whose mothers were Black and Hispanic compared with children whose mothers were White and other racial and ethnic backgrounds, supporting prior research (Desmond, 2012a). Income seems to have played a large role in eviction rates as well. Their study found that among those born into deep poverty, an estimated 1 in 4 children were evicted by age 15.

Evictions affect a significant number of children living in the United States, however its effects on child health and well-being are not well known. One case-control study found that eviction actions during pregnancy are associated with adverse birth outcomes in a sample of Georgia women between 2000 and 2016 (Himmelstein & Desmond, 2021). Another study found that low-income, urban children who experience eviction already have health and socioeconomic disadvantages at birth and low child food security at age 5. (Leifheit et al., 2020). Therefore, it is imperative that programs to prevent eviction and expand housing affordability are created to help protect children from further adversity.

Evictions during the COVID-19 Pandemic

The COVID-19 pandemic has shed further light on the affordable housing crisis, rendering millions of United States households unable to pay rent and placing them at risk for

eviction due to catastrophic job loss and unprecedented unemployment rates. An estimated 30 to 40 million people in America were at risk of eviction by the end of 2020 (Benfer et al., 2020) had it not been for local and federal eviction moratoria – orders to temporarily shield renters from eviction, protect public health, and prevent further spread of COVID-19. On September 4, 2020, the Centers for Disease Control and Prevention imposed a national moratorium on evictions until December 31st, 2020. On August 26, 2021, the United States Supreme Court issued a decision to end the moratorium, and many local and state-issued moratoria have expired or are set to expire soon. Even though data shows that eviction-related filing and hearing bans effectively subdued filings, filings have returned to levels seen before moratoria were issued, causing great concern among household renters and policymakers.

Few resources are available to monitor eviction actions, but more tools have become available since the beginning of the pandemic and the increased attention on housing affordability in the United States during the pandemic. Princeton's Eviction Lab, which was previously cited, tracks weekly filing data for 31 cities at the census tract or ZIP code level (Hepburn et al., 2020) as well as neighborhood demographics. Their data demonstrates that eviction filings both before and during the pandemic tend to be significantly higher in majority Black and Latinx neighborhoods. The School of City and Regional Planning at Georgia Institute of Technology tracks weekly and monthly filing data for Metro Atlanta's 5-County Region at the census tract and building level (Raymond et al., 2020).

The pandemic has only exacerbated the racial inequities in housing security. Recent data suggests that people of color are more likely to face eviction during the pandemic, consistent with research that historically demonstrates this trend. One review found that approximately 80 percent of people facing eviction were from non-White households (Hartman & Robinson,

2003). Women of color, particularly Black women, faced eviction filings at twice the rate of White renters and were at the greatest risk of eviction (Beiers et al., 2020). Black women were also evicted at higher rates compared to Hispanic/Latinx women and White women (Desmond, 2012b). Exactly how much of this discrepancy can be attributed to racial and gender discrimination could not be determined in this study due to the inability to control for potential confounders such as socioeconomic status and other important factors.

There are results from other studies that suggest racial and ethnic discrimination are apparent in the eviction process. One study found that after controlling for income, education level, and other factors, Hispanic tenants were more likely to be evicted when they had a non-Hispanic landlord (Greenberg et al., 2016). Additionally, the study found that Hispanic tenants living in predominantly White neighborhoods were about twice as likely to be evicted as those living in predominantly non-White neighborhoods. These findings suggest that not only does discrimination in evictions occur at the neighborhood level, but it can also be observed at the individual level after taking the background of the tenant and landlord into account. The underlying roots of racial discrimination in the United States have placed minorities in a disadvantaged position that we still see today through practices such as redlining. The structural racism theory posits that minority groups face higher risks for eviction, lower educational and employment opportunities, and lower quality health care through racial discrimination (Bailey et al., 2017). Between 2004 and 2014, more than 300,000 housing discrimination complaints were reported, with almost 90 percent of the complaints involving discrimination occurring in the rental market (U.S. Department of Housing and Urban Development, 2015). Racial disparities in neighborhood income composition can be attributed to patterns of racial segregation, according to a study that looked at this relationship between 1990 and 2009 (Reardon et al., 2015). One

study in Richmond, VA found that neighborhood racial composition is a significant factor in determining eviction rates after controlling for income, property value, and other characteristics (Teresa, 2016). This study identified a positive correlation between the share of the African American population in a neighborhood and eviction rates as well as a negative correlation between the share of non-Hispanic Whites and eviction rates. In other words, neighborhoods largely inhabited by Blacks had higher eviction rates, whereas neighborhoods largely inhabited by Whites had lower eviction rates.

Evictions damage an individual's financial record, placing an immense amount of burden and stress on one's ability to seek stable housing, to seek a stable job, and to care for their household (Desmond & Gershenson, 2016). As mentioned by Lundberg, Donnelly, and Desmond, evictions seem to be stratified by race and income, disproportionately affecting minorities and low-income earners. It has been well-documented that race matters for economic and social outcomes, so it is not surprising that minorities are being evicted at higher rates compared to Whites because they are less likely to have the income needed to pay rent. The research that has been found on eviction so far reflect the need for policymakers to consider addressing societal factors, such as poverty, to mitigate the cycle of eviction. One longitudinal randomized control trial with a sample of predominantly Black and Hispanic participants found that child welfare-involved families placed in permanent housing saw declines in physical abuse and neglect towards children (Fowler & Schoeny, 2017), highlighting the importance of connecting high-risk families to important resources.

Child Maltreatment and Evictions in Georgia during COVID-19

Georgia reported similar results to other research that found a decrease in child maltreatment reports in various parts of the United States during the COVID-19 pandemic. In Georgia, allegations of child maltreatment during the pandemic fell by 55 to 58 percent relative to 2018 and 2019 which was mainly explained by a significant drop in maltreatment referrals from the education and child care sectors once schools closed (Bullinger et al., 2020; Bullinger et al., 2021a). At the same time, the proportion of child abuse and neglect-related emergency department visits at Children's Healthcare of Atlanta, Georgia's leading pediatric healthcare provider, due to neglect from inadequate adult supervision increased by 100 percent during the pandemic compared to 2018 and 2019 (Bullinger et al., 2021b). Time at home during the pandemic was also associated with more referrals of neglect from metropolitan counties, counties with historically lower rates, and counties with more poverty (Bullinger et al. 2020).

In 2019, 10,102 out of 194,624 children investigated were confirmed as abuse and neglect victims in Georgia. If using Peterson's approximation of lifetime costs for a victim of child abuse, that amounts to about $8.4 billion in lifetime costs for victims, although this number could be considered an underestimate given that the cost assumes that all maltreatment outcomes were nonfatal and that the number of victims is assumed to be lower due to the decrease in reports that can be attributed to the pandemic.

According to the Atlanta Regional Commission, landlords in Georgia's five core counties (Clayton, Cobb, DeKalb, Fulton, and Gwinnett) filed for evictions against roughly 100,000 renters during the CDC eviction moratorium (September 2020 to August 2021). Landlords in those same counties filed for nearly 11,000 evictions in September 2021. One of the five

counties – DeKalb – extended the eviction moratorium by 60 days at the local level, which expired on September 29, 2021.

How Eviction Filings May Be Related to Child Abuse and Neglect

Prior research suggests that eviction filings can affect child maltreatment reports through several pathways, which are discussed in the following sections.

Family-Level Mechanisms

Inadequate Housing and Housing Instability

Inadequate housing and housing instability can increase the stress placed on families, leading to negative consequences that potentially heighten the risk of child abuse and/or neglect. A recent systematic review indicated that various measures of housing stress, including homelessness or eviction, shelter stays, foreclosure filings, housing instability, inadequate housing, and housing unaffordability are associated with an increased likelihood of caregiver or child self-reported maltreatment and CPS reports (Chandler et al., 2020). Additionally, housing stress was associated with more severe CPS outcomes included substantiated reports, child out-of-home placements, and maltreatment deaths.

Evictions that are carried out often force families into lower quality housing (Desmond et al., 2015), and as a result they were more likely to report housing problems such as broken appliances and the lack of running heat or water. Such families may not have had any choice when it came to searching for the next place to live and were focusing on avoiding homelessness more than finding better quality housing (Coulton et al., 2007). Prior research suggests that housing conditions may prompt involvement by child protective services. One study's results

show that physically hazardous housing conditions such as leaking roofs and exposed electrical wires predicted child neglect, but not necessarily physical abuse or indicated reports (Hirsch et al., 2015).

Psychological Stress, Mental Health Issues, and Substance Use

Parents reported to CPS are often experiencing adversity themselves, faced with having to raise their children under conditions of poverty and racial discrimination (Fong, 2017). This increased stress only hamstrings parents' abilities to adequately care for their children, since racial discrimination is often linked to lower socioeconomic status, poorer nutrition, substandard housing, and other inequities (Beech et al., 2021) that place disadvantaged families at an even greater disadvantage when it comes to thriving. Furthermore, racial discrimination is associated with higher levels of depressive symptoms in African Americans (English et al., 2014). The relationship between the threat of home eviction and experiences with mental health problems has been previously documented, including depression, long-term stress, and suicide especially for minority residents and those of low socioeconomic status (Cannuscio et al., 2012; Cook & Davis, 2012; Houle, 2014; Rojas et al., 2016). Homelessness, residential instability, and eviction has been found to directly affect child neglect risk and influences abuse and neglect risk through maternal stress (Warren & Font, 2015). A literature review conducted by Vásquez-Vera and colleagues (2017) found that the threat of eviction alone, such as an eviction filing or missing deadlines to pay rent, has a significant impact on mental and physical health. Such outcomes are associated with an increased risk of child maltreatment (Taylor et al., 2009; Warren & Font, 2015).

Furthermore, depression and psychological stress can exacerbate unhealthy coping strategies, such as substance use. One study found that higher levels of eviction rates were associated with higher rates of drug- and alcohol-related mortality (Bradford & Bradford, 2020). Forty percent of the studies reviewed by Tsai and Huang (2019) showed that substance use problems were related to eviction. A large body of literature also supports a relationship between parental substance use disorder and any form of child abuse (Stith et al., 2009; Kepple, 2018; Stanton-Tindall et al., 2013; Dube et al., 2001; Sedlak et al., 2010). The availability of alcohol alone in a neighborhood may also contribute to child abuse and neglect (Freisthler et al., 2007). Thus, it is possible that evictions may affect child abuse and neglect through a mental health or substance use pathway.

Neighborhood-Level Mechanisms

Perceived Neighborhood Safety and Quality

Perceived neighborhood safety and quality and may influence the likelihood of reporting. High-risk neighborhoods are commonly composed of minority and/or low-income residents experiencing struggles with employment, transportation, and racial discrimination. In a sample of adults in Baltimore, the percentage of White individuals residing in a neighborhood was positively associated with increased levels of racial discrimination (English et al., 2014). It's possible for parents living in these types of neighborhoods to misjudge parenting techniques by other-raced neighbors as abusive or neglectful, which can lead to increased reports (Klein & Merritt, 2014). Changes in racial and ethnic composition – such as an increase in the percentage of Black residents in a neighborhood – may play a role in increases in child maltreatment reports (Coulton et al., 2018), which suggests that these neighborhoods are being perceived in such a

way that places them at a greater risk for CPS involvement compared to others. As noted previously, higher rates of Black residents in a neighborhood were also positively associated with higher rates of evictions.

Additionally, families living in high-risk neighborhoods or those that have greater disadvantages may be more visible to authorities, thus more susceptible to be reported as these areas may have increased surveillance by law enforcement and social welfare agencies. Research shows that neighborhoods higher in collective efficacy, intergenerational closure, and lower in disorder had lower proportions of neglect, physical abuse, and sexual abuse substantiated cases after controlling for differences in structural factors (Molnar et al., 2016). Likewise, neighborhood social disorder and perceived negative neighborhood processes are linked to an increased risk in physical abuse and neglect (Freisthler & Maguire-Jack, 2005), which are potentially mediated by parenting stress (Guterman et al., 2009). However, research on the processes that link neighborhood conditions to maltreatment reports remains unclear, with only one recent study establishing a relationship (Bullinger & Fong, 2021).

Many renter households are at risk for eviction due to the COVID-19 pandemic and its economic fallout. Evictions can place negative consequences on families that can potentially heighten the risk of child abuse and neglect. Increased knowledge of the relationship between eviction filings and reports of child abuse and neglect can help organizations and providers understand the role housing instability plays in child well-being and how to respond to it. The current research proposal seeks to build upon the work of Bullinger and Fong to explore the relationship between eviction filings and child maltreatment reports in metro Atlanta. This study would be the first to our knowledge to connect eviction filing records with administrative reports

of child maltreatment during the COVID-19 pandemic. We also seek to add to growing body of research on housing and other factors that affect child well-being (Marcal, 2018; Slack et al., 2017; Frioux et al., 2014). Additionally, we are interested in understanding what effect the CDC eviction moratorium may have played in affecting maltreatment reports as well as affecting the relationship between eviction filings and maltreatment reports. Previous research has linked housing instability to an increased risk of child maltreatment. Does temporarily halting evictions alter this relationship, even though eviction filings are allowed to continue during the moratorium?

Methods

Data Sources

Metro Atlanta Evictions Data Collective Database

The Metro Atlanta Region Eviction Tracker was developed by a team of scientists from the Georgia Institute of Technology, the Federal Reserve Bank of Atlanta, and the Atlanta Regional Commission to capture formal evictions activity in the metro Atlanta area. The tracker was designed with the purpose of informing and improving the ability of policymakers, service providers, non-government organizations, and government entities to understand and respond to eviction-related housing instability, particularly in the context of the COVID-19 pandemic.

Eviction filing data are parsed and uploaded to the tracker once per week from the magistrate courts' case record search sites for Clayton, Cobb, DeKalb, Fulton, and Gwinnett counties. Each case is geocoded based on the defendant's address and aggregated at the census tract level to determine an eviction rate. Eviction rates are calculated by dividing the total filings by the number of renter-occupied housing units obtained from the American Community Survey.

Due to missing, incorrect, or difficult to parse addresses, approximately 1% of all filings are excluded from the mapped totals. In addition, the case counts may differ from those previously reported due to the occasional lag in filings being entered into the courts' online systems.

Data used for the analysis captures the period of May 2020 and September 2020, which contained 20,234 eviction filings from census tracts in DeKalb and Fulton County. The analysis will look at the relationship between eviction filings and maltreatment reports over this 8-month period. To observe the effect of the moratorium order on this relationship, two 4-month time periods are compared – May to August (before the moratorium order) and September to December (after the moratorium order). Between May and August, a total of 5272 eviction filings were recorded. Between September and December, there were 14,962 eviction filings.

SHINES

SHINES is Georgia's primary statewide automated child welfare information system, the official comprehensive case management and data collection system for the Georgia Division of Family and Children Services. The web-based system monitors children across Georgia's 159 counties to track all services provided to children and families. All calls alleging maltreatment made to child protective services undergo a screening process that determines whether they meet the threshold to file an investigative report. The dataset used contained 5335 de-identified records of total reports of child abuse and neglect as well as 282 de-identified substantiated reports between May 2020 and December 2020 at the census block level by month for DeKalb and Fulton County, two of the most populated counties in the metro Atlanta region. The data was aggregated to the census tract level to match the geographical level of the eviction filing data.

Report rates were calculated by taking the number of reports alleging maltreatment of children ages 0-17 in each tract and dividing it by the total child population (age < 18 years), which is estimated by the American Community Survey, in each tract and multiplying the result by 1000 to create a ratio that represents the number of reports per 1000 children. Additional analyses also explored the relationship between eviction filings and substantiated maltreatment report rates, which are calculated the same way. It is important to note that allegations of maltreatment are subject to reporting bias, whether from the mandated reporter or the screener. Additionally, each state's definition of child abuse and neglect may vary, and the requirements that need to be met for an investigative report to be filed may vary as well. Furthermore, investigative reports do not fully reflect the extent of child maltreatment – not all maltreatment is reported to officials, and that was most likely the case during the COVID-19 pandemic. With this knowledge, the primary outcome for this analysis is the total maltreatment report rate[2], which is a better measure of maltreatment risk as opposed to substantiated reports (Kohl et al., 2009). A secondary outcome looks at the relationship between eviction filing rates and substantiated maltreatment report rates.

American Community Survey

Census tract level demographic and socioeconomic factors were obtained from the U.S. Census Bureau's American Community Survey (ACS), which gathers information annually on approximately 3.5 million households. Estimates and percentages for the population by race/ethnicity, educational attainment, unemployment, and poverty were gathered and included in the analysis as potential confounders. Data reflect the 2015-2019 5-year estimates since 1-year

[2]We define total maltreatment reports as the sum of alleged reports and substantiated reports.

estimates were not available at the census tract level for DeKalb and Fulton County. It is important to note that the COVID-19 pandemic has likely affected the unemployment and poverty status of many individuals that can't be accounted for in this analysis. Thus, estimating any effects of unemployment and poverty on child maltreatment reports in this analysis should take this note into consideration.

Analysis

Our analysis aims to answers three questions: (1) What is the relationship between eviction filings and total maltreatment reports at the census tract level during the study period (May to December 2020), (2) What effect did the CDC moratorium (from September to December 2020) have on this relationship, and (3) Is the effect of eviction filing rates on total maltreatment report rates different before and after the moratorium order.

A negative binomial generalized linear mixed-effects model (GLMM) was used to evaluate the association between eviction filing rates and total maltreatment report rates. To answer the first research question, we are interested in examining the expected percent increase in the maltreatment report rate for every 1 unit increase in the eviction filing rate. To examine the effect that the CDC moratorium had on maltreatment reports, we are interested in the percent difference in the maltreatment report rate before and after the moratorium order. To test for interaction, contrast statements are used to examine any significant differences in the relationship between eviction filing rates and maltreatment report rates before and after the moratorium order.

Various models will look at the relationship between the eviction filing rate and maltreatment report rate with and without the inclusion of census tract-level covariates, which includes race, educational attainment, unemployment rate, and poverty rate, which have all been

largely used as confounders in previous studies related to housing instability and child maltreatment. Also, the COVID-19 pandemic is more likely to impact families of lower SES, so the inclusion of such factors may provide a better understanding of how the pandemic has impacted disadvantaged populations. In addition, we previously highlighted that stress may be a mechanism that effects the relationship between eviction filings and child maltreatment, so unemployment and poverty were used as markers of psychosocial stress in this study.

To examine the relationship between eviction filing rates and maltreatment report rates, the following model was used:

$$M = \alpha + \beta_1 E + \beta_2 T + \gamma_1 C + \gamma_2 R + \gamma_3 ED + \gamma_4 U + \gamma_5 P + \delta_1 E*T$$

Where M represents the measure of child maltreatment reports. E is the primary predictor of interest, which represents the eviction filing rate. T is a secondary predictor that indicates the period being studied: before or after the eviction moratorium order. A census tract random effect ($\gamma_1 C$) accounts for similarities within census tracts, and census tract-level covariates ($\gamma_2 R$ = Race/ethnicity, $\gamma_3 ED$ = Educational attainment, $\gamma_4 U$ = Unemployment rate, $\gamma_5 P$ = Poverty rate) adjust any time-invariant characteristics of a census tract that may be correlated with both eviction filing and report rates. To understand whether the effect of eviction filing rates on total maltreatment report rates is different before and after the eviction moratorium order, an eviction filing rate by moratorium interaction term ($\delta_1 E*T$) is included in the model.

The eviction filing rate was log-transformed to better fit the model. The rate was skewed right, with many census tracts reporting a low eviction filing rate, thus making the data not meaningful to evaluate as a continuous variable. Log-transforming the rate allows us to better understand the differences between high eviction filing rate neighborhoods and low eviction filing rate neighborhoods. The total child population at the census tract level from the 2015-2019

ACS was used as an offset to estimate the number of individuals that were exposed during the study period. Thus, coefficients in the model are interpreted as the effect on the maltreatment report rate, not total number of maltreatment reports. All analyses were completed with R 4.1.2 (R Core Team 2021) using the lme4 package.

Results

Sample

Table 1 presents descriptive statistics on eviction filings, census tract-level factors, and maltreatment reports in DeKalb and Fulton County, stratified by the bottom and top quartile of eviction filing rates. After removing tracts that lacked eviction filing data or potential outliers, 5121 of 5335 (96.0%) total reports and 268 of 282 (95.0%) substantiated reports were included in the analysis. Tracts in the top quartile of eviction filing rates had populations that were predominantly Black compared to tracts in the bottom quartile (72.4% vs. 22.5%), had a higher proportion of the residents with an education level of high school graduate or less (22.2% vs 12.2%), had a higher share of unemployed people (4.1% vs. 2.4%), and had a higher share of people living under the federal poverty line (16.2% vs 10.1%).

A total of 20,234 eviction filings are included in this analysis, with 5,272 filings being captured before the moratorium (May to August) and 14,962 filings after the moratorium order took effect (September to December). Tracts in the bottom quartile had an average of 1.22 eviction filings per 100 occupied housing units. Tracts in the highest quartile had an average 13.8 eviction filings per 100 occupied housing units. Census tracts in the top quartile of eviction filing rates had a higher total maltreatment report rate (16.8 children per 1000 children vs. 6.7) and

substantiated maltreatment report rate (0.87 vs. 0.35) compared to census tracts in the bottom quartile of eviction filing rates.

Figure 1 shows the total maltreatment report rate across the census tracts stratified into quarters during the study period. Based on the figure, there is a general trend showing that when the eviction filing rate increases, so does the total maltreatment report rate. Figure 2 visualizes the eviction filing rate and total maltreatment report rate over the study period. As the eviction filing rate increased between May and September, so did the total maltreatment report rate. After the CDC eviction moratorium was issued on September 4, the eviction filing rate slightly increased through December, whereas the total maltreatment report rate drastically declined after peaking in October. The relationship between the two variables is shown at the census tract level in Figure 3, comparing pre (May to August) and post (September to December) moratorium. Figure 4 presents maps of the total maltreatment report rate and eviction filing rate by census tract, grouped by quartile. High eviction filing rates and high total maltreatment report rates are generally seen in the central and southern regions of DeKalb and Fulton County.

Main Results: Total Maltreatment Reports

Results from unadjusted and adjusted negative binomial regression models for the primary outcome are detailed in Table 2. Incident rate ratios for the exposure describe the expected percent increase in the total maltreatment report rate for every 1 log unit change in the eviction filing rate. Interpretation of these values may not be the most practical for understanding the impact of this relationship. To provide a more practical interpretation, we calculated the percent difference in the total maltreatment report rate between census tracts in the 75^{th} percentile and the 25^{th} percentile of eviction filing rates. This was done by taking the difference

of the log-transformed absolute eviction filing rate at the 75th and 25th percentiles, multiplying the difference by the regression coefficient, and exponentiating the value. The resulting value represents the rate ratio contrasting the outcome in census tracts at the 75th percentile versus those at the 25th percentile of eviction filing rates. Note that the following differences represent an absolute change, which is different from a relative change.

Questions 1 and 2: The effect of eviction filing rates and the eviction moratorium order on total maltreatment report rates

The crude model, which examines the effect of eviction filings on total maltreatment reports without any other covariates, suggests that the total maltreatment report rate in census tracts in the 75th percentile of eviction filing rates was 7.0% higher compared to census tracts in the 25th percentile (95% confidence interval 0.003%–14%). When the model excluded census tract-level demographic and socioeconomic factors (Model 3a), the total maltreatment report rate in census tracts in the 75th percentile of eviction filing rates was 24.2% higher compared to census tracts in the 25th percentile before the moratorium order and a 22.7% higher after the moratorium order. The eviction moratorium was tested for possible interaction, and there was no evidence that it was a significant effect modifier for the relationship between eviction filing rates and the maltreatment report rate. When excluding the interaction term from the model (Model 4a), the total maltreatment report rate in census tracts in the 75th percentile of eviction filing rates was 7.7% higher compared to census tracts in the 25th percentile (95% confidence interval 0.003%–15.7%).

Question 3: The effect of eviction filing rates on total maltreatment report rates different before and after the moratorium order

After holding the eviction moratorium constant and accounting for census tract-level covariates (Model 5a – full model), the total maltreatment report rate in census tracts in the 75th percentile of eviction filing rates was 7.5% higher compared to census tracts in the 25th percentile (95% confidence interval 0.001%–17%) during the study period. Additionally, the total maltreatment report rate after the moratorium order was observed to be 18% lower than before the moratorium order (95% confidence interval 5%–29%). Race/ethnicity and poverty were also positively associated with total maltreatment report rates. For every 10% increase in the proportion of African Americans, the total maltreatment report rate is observed to increase by 25% (95% confidence interval 12%–39%). A 1% increase in the poverty rate was associated with a 2% increase in the total maltreatment report rate (95% confidence interval 1%–3%). The eviction filing rate : moratorium interaction term was not significant. After the moratorium order took effect, the total maltreatment report rate in census tracts in the 75th percentile of eviction filing rates was 7.2% higher compared to census tracts in the 25th percentile, suggesting there was no significant change in the difference between eviction filing rates and total maltreatment report rates before and after the moratorium order.

Figure 5 is a bivariate choropleth map that displays the relationship between eviction filing rates and total maltreatment report rates. Bivariate choropleth maps are useful in displaying the relationship between two variables, but it does not consider any confounders or effect modifiers. The map, in essence displays a crude association between the eviction filing rate and total maltreatment report rate by census tract. Areas that are shaded red-brown indicate census tracts where the relationship is strongest, whereas areas shaded in different colors indicate census

tracts where the relationship is not as strong. According to the map, the positive relationship between eviction filing rates and total maltreatment report rates is relatively concentrated in the southern parts of DeKalb and Fulton County.

Secondary Results: Substantiated Maltreatment Reports

Although we believe substantiated maltreatment reports to be less of an indicator for true maltreatment risk because maltreatment is widely underreported, it is still worth studying to better understand any factors that may influence the process of assessing whether maltreatment is deemed to be substantiated. Thus, a secondary analysis was conducted using the substantiated maltreatment report rate as the outcome of interest, and the results are shown in Table 3. The crude model showed that the substantiated report rate in census tracts in the 75th percentile of eviction filing rates was 8.8% higher compared to census tracts in the 25th percentile (95% confidence interval 3.1%–14.9%).

When including the moratorium order as an additional predictor (Model 2b), the substantiated report rate in census tracts in the 75th percentile of eviction filing rates was 14.4% higher compared to census tracts in the 25th percentile (95% confidence interval 3.1%–14.9%). Additionally, the substantiated report rate after the moratorium order was observed to be 50% lower compared to before the moratorium order (95% confidence interval 34%–82%). The predictors remained statistically significant after inclusion of the eviction filing rate by moratorium interaction term, however the interaction term itself was not significant (Model 3b). After accounting for fixed effects and random effects (Model 4b), the substantiated report rate in census tracts in the 75th percentile of eviction filing rates was 8.6% higher compared to census tracts in the 25th percentile (95% confidence interval 1.3%–16.3%). Furthermore, the

substantiated report rate after the moratorium order was observed to be 39% lower compared to before the moratorium order (95% confidence interval 10%–59%). When the interaction term is included in the model, the relationship between eviction filing rate and substantiated report rate is no longer significant (Model 5b). However, the substantiated report rate after the moratorium order was observed to be 51% lower (95% confidence interval 15%–72%).

Discussion

In this ecologic analysis, we found that census tract-level eviction filing rates were positively associated with increased alleged child maltreatment risk in DeKalb and Fulton County after adjusting for other covariates during the study period. While there was a significant decrease in the total and substantiated maltreatment report rates after the CDC eviction moratorium took effect, there were no significant differences in the association between the eviction filing rate and maltreatment report rates before and during the moratorium. Furthermore, race and poverty were also found to be associated with alleged child maltreatment risk after holding other factors constant. The findings from this study are consistent with established literature linking housing insecurity with child maltreatment risk.

A recent study found a positive relationship between eviction notices and maltreatment reports in Connecticut (Bullinger & Fong, 2020). Another study found that foreclosure rates were associated with an increase in investigated CPS reports and substantiated CPS reports (Frioux et al., 2014). Other literature that supports the association between housing insecurity and child maltreatment are described in a systematic review (Chandler et al., 2020), which covers various housing measures such as homelessness, housing instability, housing unaffordability, eviction, and inadequate housing. However, the present study, as far as we are

aware, is the first to analyze the relationship between census tract-level eviction filings and state-tracked maltreatment reports in the context of the COVID-19 pandemic. There was a substantial decrease in child maltreatment reports because of the pandemic, which led to worries that child abuse and neglect may be severely underreported and masked during this period. Despite the decrease in reporting, our analysis found that the risk of eviction is still linked to an increased risk of maltreatment in spite of measures to prevent evictions from being carried out. Furthermore, the findings suggest that child well-being may not be impacted by only evictions, but it may also be impacted by the beginning stages of the eviction process.

There are multiple explanations for the decrease in maltreatment reports after the CDC moratorium took effect on September 4. When looking at the results of the analysis, it is also important to consider the seasonality in maltreatment reports. Figure 6 displays the total maltreatment report rate in DeKalb and Fulton County between 2016 and 2020. In general, the rate begins to increase during the summer between July and September and then begins to decrease after October. As mentioned previously, teachers and school workers can account for up to 20 percent (and possibly more) of all maltreatment allegations, so the decrease towards the end of the year may be partially explained by the fact that most schools are not in session due to the holiday season. Additionally, 2020 presents a unique circumstance since schools held classes remotely due to the pandemic, which could explain the decrease the number of allegations made even more than previous years. It is possible, then, that the reduction in the maltreatment report rate towards the end of 2020 isn't a result of the eviction moratorium, but rather a result of a seasonal pattern in combination with other factors that are unique to 2020. Different forms of economic support during the COVID-19 pandemic may also have played a role in reducing the number of reports. The Georgia Department of Labor supported unemployed individuals through

the Federal Pandemic Unemployment Assistance (PUA), Federal Pandemic Unemployment Compensation (FPUC), Pandemic Emergency Unemployment Compensation (PEUC), and Lost Wages Assistance (LWA) programs, providing financial benefits to help Georgians who were unemployed during the pandemic. CDC has recommended strengthening economic support to families as a strategy to prevent child abuse and neglect (Fortson et al., 2016), and it is possible that the number of economic payments made to families during this period was a factor in the decrease of reports.

There are limitations to consider as part of this study. First, there is the ecological fallacy which states that neighborhood-level characteristics cannot be reliably projected onto individuals. To clarify, the relationship between ecological eviction filings and aggregated child abuse and neglect reports does not clearly tell us the extent to which the experience of eviction filings affects an individual child's risk of maltreatment. However, the study design could help explain that the aggregate amount of eviction filings in a neighborhood could plausibly be a contextual stressor that affects all families in the tract. Thus, the exposure to high eviction filing rates within a census tract could predict child maltreatment at the family level. Furthermore, an ecologic study is an unbiased method to quantify an ecologic effect estimate, so we can state that the aggregate eviction filing rate affects the aggregate maltreatment report rate, which potentially serves as useful information from a public health perspective.

In addition, socioeconomic factors that were included as confounders in this study may not accurately represent the study period. The COVID-19 pandemic led to record levels of unemployment, which could have driven more people into poverty as a result. Poverty was found to be significantly associated with the total maltreatment report rate, but it is still unclear whether this relationship would still exist if there was poverty-related data available for the study period.

Since this is a cross-sectional study, it is difficult to make any statements about causal associations between eviction filings and maltreatment reports. The association could arguably operate in either direction, however maltreatment reports leading to eviction filings seems less likely because case workers on maltreatment investigations may be able to provide families facing housing instability and financial hardship with resources to abate those issues. Nonetheless, inferences about causality cannot be made with these results and any future research that can link maltreatment report data to eviction-related data to identify causal effects is necessary.

Although the study observed an association between eviction filings and maltreatment reports, there are pathways in which this relationship can be explained that were not included in the analysis. The threat of an eviction filing alone has a significant impact on mental health of caretakers (Vásquez-Vera et al., 2017), which can influence behaviors that lead to child abuse and neglect. Health outcomes such as parental stress aren't captured in this analysis. Housing quality and neighborhood safety are also mechanisms that can explain this relationship, as they have been previously linked to increased risk of maltreatment. Future studies should consider including such measures as potential mediators to further elucidate this association.

Next, only alleged and substantiated case data were available for the study. It would be interesting whether the relationship between eviction filings and maltreatment reports also differ by type of maltreatment, such as physical abuse, sexual abuse, and neglect. Additionally, child maltreatment is largely underreported and underestimated, as many cases may never come to the attention of Child Protective Services to begin with. Although surveillance and reporting bias are unlikely when it comes from professionals (Chaffin & Bard, 2006), there is the possibility of neighborhood selection bias. Families with higher risk of maltreatment may have been driven to

live in higher-risk areas and have greater disadvantages that may be more visible to neighbors and nonprofessionals. Prior studies suggest that such areas may be stigmatized due to signs of disorder and high proportions of people of color, and this stigma can affect perceptions of behaviors and situations by residents and nonresidents (Sampson & Raudenbush, 2004).

Previous literature that uses the structural racism theory as a framework to explain the potential higher risk for housing insecurity experienced by minority groups (Bailey et al., 2017; Medina et al., 2020) could also be a framework that explains the possible increased risk for child maltreatment (Maguire-Jack et al., 2021; Molnar et al., 2021). We cannot definitively state that our results support the structural racism theory, however our study showed a significant positive association between census tract-level proportion of Non-Hispanic Blacks and the total maltreatment report rate, which may be explained by the phenomenon just described. Additionally, eviction filings occurred at higher rates in areas that are predominantly inhabited by Non-Hispanic Blacks, which is worth exploring further independent of child maltreatment risk.

Finally, this study was conducted in a predominantly urban area, making it difficult to generalize results to rural areas or other neighborhoods that may not have a similar geographic composition. Future studies examining rural geographical areas and other contexts would help to strengthen and generalize our results. Maltreatment reports were also measured at the census tract level but provided at the census block level. It would have been more advantageous to have eviction filing data at the block level to get higher level understanding this relationship, one that could better explain neighborhood-level effects.

Regarding public health implications, the results in this study suggest eviction filings as a risk factor for child maltreatment and therefore could be targeted in more focused preventive

interventions, especially for underserved and underrepresented communities. Although the eviction moratorium may have temporarily halted evictions, the link between eviction filings and maltreatment reports remained, indicating that fundamental changes to addressing housing insecurity may be required to improve public health. It may not only be important to prevent evictions, but to also prevent the process of filing an eviction as the process may also have a significant impact on child well-being. Child maltreatment is linked to health and economic consequences that can impact an individual throughout their entire life. Given such consequences, it is necessary to understand the factors associated with risk of child maltreatment. Addressing housing insecurity is not an easy task, but it offers a promising strategy to reduce the risk of child abuse and neglect among many other public health issues.

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Tables & Figures

Table 1. Distribution of eviction filings, census tract characteristics, and maltreatment reports

	All census tracts (n = 337)	Census tracts in top quartile of eviction filing rates	Census tracts in bottom quartile of eviction filing rates
Eviction filings			
Mean number of eviction filings	60.0	134.0	10.1
Before the Eviction Moratorium Order	16.8	37.2	3.2
After the Eviction Moratorium Order	45.9	98.1	8.4
Eviction filing rate	6.3	13.2	1.3
Before the Eviction Moratorium Order	1.7	3.6	0.4
After the Eviction Moratorium Order	4.7	9.6	1.0
Characteristics of census tracts			
County (%)			
DeKalb	42.1	47.1	37.6
Fulton	57.9	52.9	62.4
Total Population	1,707,748	493,399	389,838
Child Population	395,265	123,052	89,272
Non-Hispanic White (%)	35.2	18.6	58.8
Non-Hispanic Black (%)	50.0	72.4	22.5
Hispanic (%)	8.0	6.4	7.1
Education Level (%)			
High school or less	19.4	22.2	12.2
Bachelor's	19.7	15.2	25.8
Grad/Professional	14.1	9.7	20.6
Percent Unemployed	3.3	4.1	2.4
Percent Living Under FPL	14.8	16.2	10.1
Median gross rent ($)	1204	1138	1379
Child maltreatment reports			
Total maltreatment report rate	13.1	16.8	6.7
Before the Eviction Moratorium Order	7.0	9.2	3.5
After the Eviction Moratorium Order	6.1	7.6	3.2
Substantiated report rate	0.7	0.9	0.4
Before the Eviction Moratorium Order	0.4	0.4	0.3
After the Eviction Moratorium Order	0.3	0.5	0.1

N = 337 census tracts are represented in this table. Eviction filing rates are calculated as filings per 100 occupied housing units. Eviction filing quartiles are calculated based on each census tract's eviction filing rate during the study period. Child maltreatment report rates are calculated as reports per 1000 children. 11 tracts were not included due to lack of eviction filing or maltreatment report data. 1 tract was removed as an outlier because it had more total reports than total number of children. Additionally, this tract only had 10 children. Data provided by the American Community Survey, 5-year estimates (2015-2019), Metro Atlanta Evictions Collective Database, and Fostering Court Improvement (maltreatment report data)

Table 2. Association between eviction filing rates and total maltreatment report rates (cluster-adjusted)

	Total Maltreatment Report Incidence				
	Model 1a	Model 2a	Model 3a	Model 4a	Model 5a
	Crude	Adjusted (eviction filing rate and time period)	Adjusted (eviction filing rate, time period, interaction)	Adjusted (eviction filing rate, time period, covariates)	Adjusted (eviction filing rate, time period, covariates, interaction)
	Incidence Rate Ratio (95% Confidence Interval)				
Eviction filing rate	1.07 (1.0–1.14)*	1.23 (1.14–1.34)***	1.24 (1.13–1.36)***	1.08 (1.0–1.16)*	1.07 (0.99–1.17)^
Time Period					
Before Moratorium Order		Ref	Ref	Ref	Ref
After Moratorium Order		0.71 (0.63–0.8)***	0.72 (0.61–0.8)***	0.82 (0.73–0.92)***	0.82 (0.71–0.95)***
Eviction filing rate (pre moratorium order) - contrast			1.24 (1.13–1.36)***		1.07 (0.99–1.17)
Eviction filing rate (post moratorium order) - contrast			1.22 (1.11–1.36)***		1.08 (0.98–1.19)
Race/Ethnicity					
Percent White				1.1 (0.98–1.24)	1.1 (0.98–1.24)
Percent Black				1.25 (1.12–1.39)***	1.25 (1.12–1.39)***
Percent Hispanic				1.15 (1.0–1.24)^	1.15 (1.0–1.24)^
Education Level					
Percent High school or less				1.1 (0.93–1.31)	1.1 (0.93–1.31)
Percent Bachelor's				1.04 (0.84–1.3)	1.04 (0.84–1.3)
Percent Grad/Professional				0.98 (0.81–1.17)	0.98 (0.81–1.18)
Unemployment Rate				1.0 (0.97–1.03)	1.0 (0.97–1.03)
Poverty Rate				1.02 (1.01–1.03)***	1.02 (1.01–1.03)***
Eviction filing rate : time interaction term			0.99 (0.89 - 1.1)		1.01 (0.91 - 1.11)

^p < .10. *p < .05. **p < .005. ***p < .001

Table 3. Association between eviction filing rates and substantiated report rates (cluster-adjusted)

	Substantiated Report Incidence				
	Model 1b	Model 2b	Model 3b	Model 4b	Model 5b
	Crude	Adjusted (eviction filing rate and time period)	Adjusted (eviction filing rate, time period, interaction)	Adjusted (eviction filing rate, time period, covariates)	Adjusted (eviction filing rate, time period, covariates, interaction)
	Incidence Rate Ratio (95% Confidence Interval)				
Eviction filing rate	1.27 (1.09–1.48)**	1.46 (1.09–1.48)***	1.38 (1.11–1.71)**	1.26 (1.04–1.54)*	1.17 (0.93–1.48)
Time Period					
Before Moratorium Order		Ref	Ref	Ref	Ref
After Moratorium Order		0.50 (0.34–0.82)***	0.43 (0.25–0.73)**	0.61 (0.41–0.9)*	0.49 (0.28–0.85)*
Eviction filing rate (pre moratorium order) - contrast			1.38 (1.11–1.71)**		1.17 (0.93–1.48)
Eviction filing rate (post moratorium order) - contrast			1.62 (1.21–2.19)**		1.45 (1.06–1.98)*
Race/Ethnicity					
Percent Non-Hispanic White				1.09 (0.87–1.37)	1.1 (0.88–1.39)
Percent Non-Hispanic Black				0.95 (0.74–1.22)	0.96 (0.74–1.23)
Percent Hispanic				1.1 (0.83–1.45)	1.09 (0.83–1.45)
Education Level					
Percent High school or less				1.11 (0.78–1.58)	1.14 (0.8–1.62)
Percent Bachelor's				1.03 (0.65–1.63)	1.05 (0.67–1.66)
Percent Grad/Professional				1.2 (0.79–1.84)	1.22 (0.8–1.86)
Unemployment Rate				1.0 (0.95–1.06)	1.0 (0.95–1.06)
Poverty Rate				1.02 (1.0–1.04)^	1.02 (1.0–1.04)^
Eviction filing rate : time interaction term			1.18 (0.82–1.7)		1.24 (0.86–1.8)

^p < .10. *p < .05. **p < .005. ***p < .001

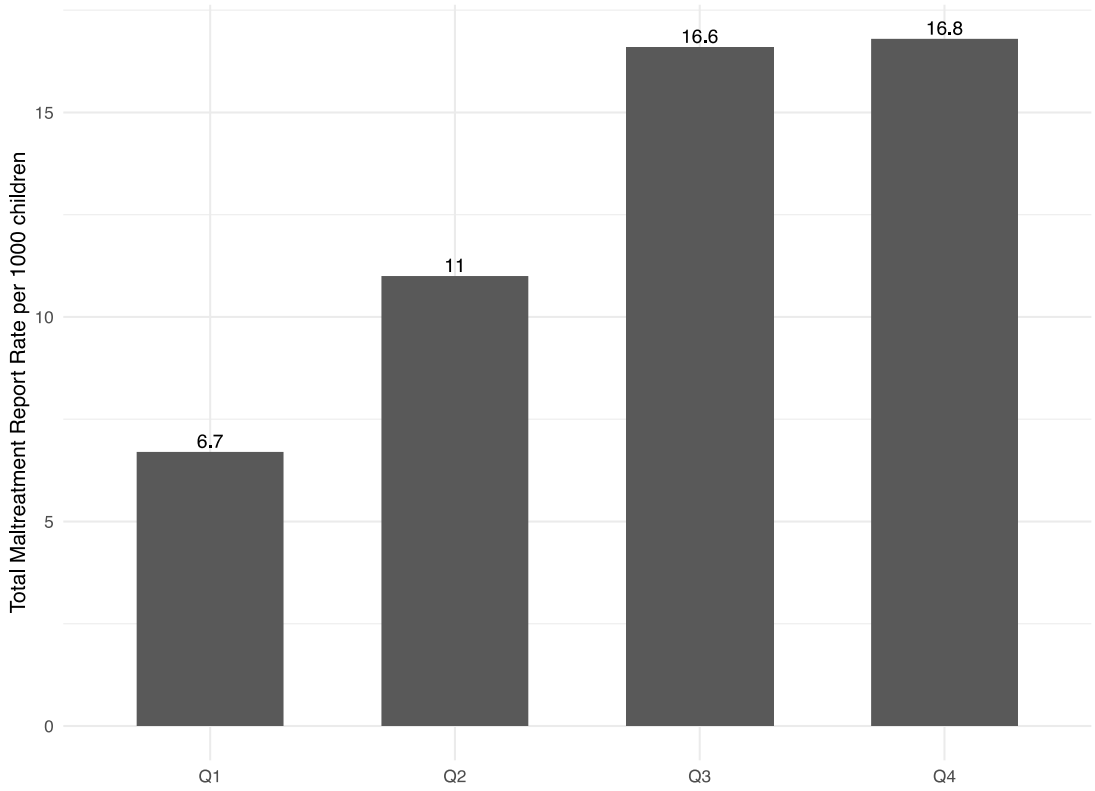

Figure 1. Total child maltreatment report rate by eviction filing rate quarter.

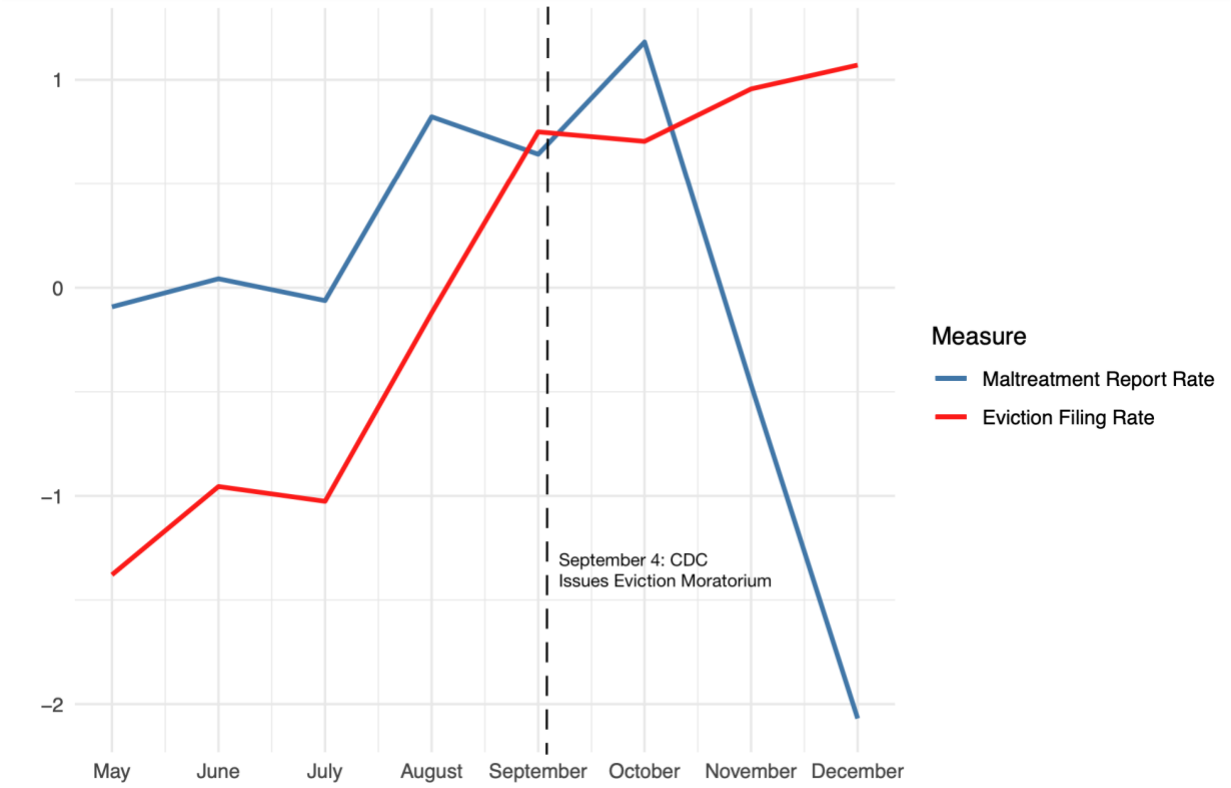

Figure 2. Trends in the eviction filing rate and total maltreatment report rate in DeKalb and Fulton County between May and September 2020. Note: y-axis represents a normalized scale. Each measure was normalized by subtracting the measure's sample mean from its real value and dividing the result by the measure's standard deviation.

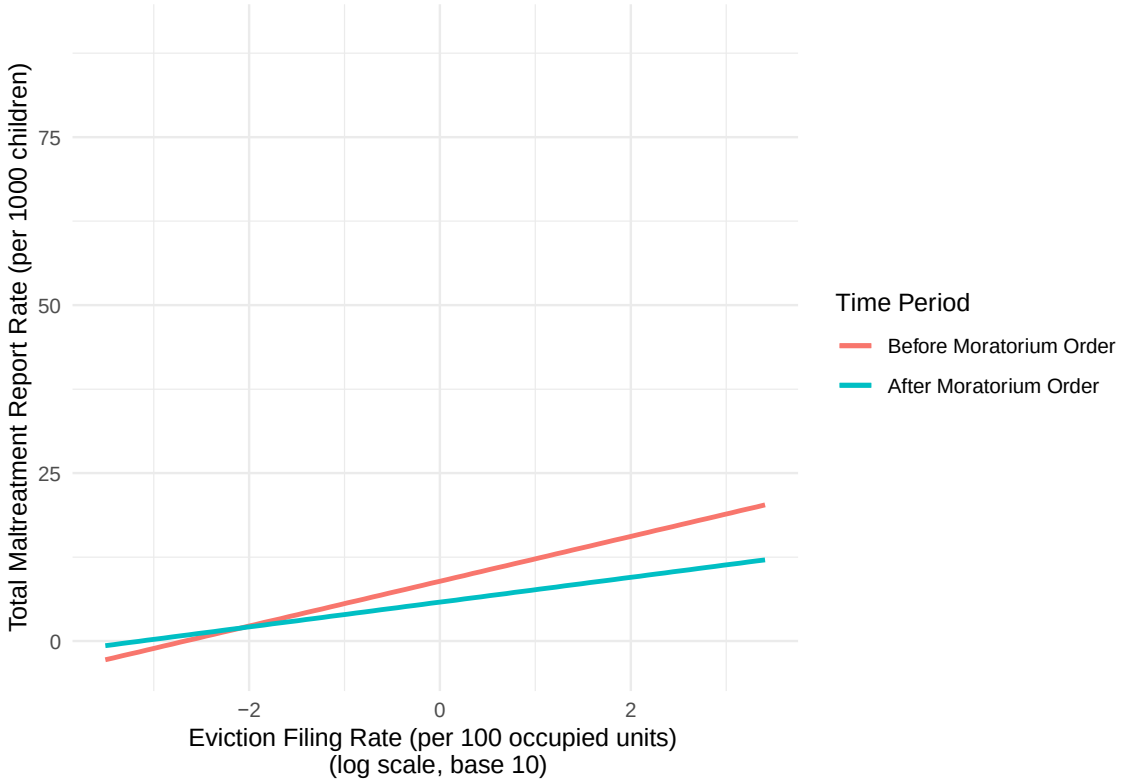

Figure 3. The relationship between the eviction filing rate (log transformed) and the total maltreatment report rate before and after the CDC eviction moratorium. Note: each point represents a census tract.

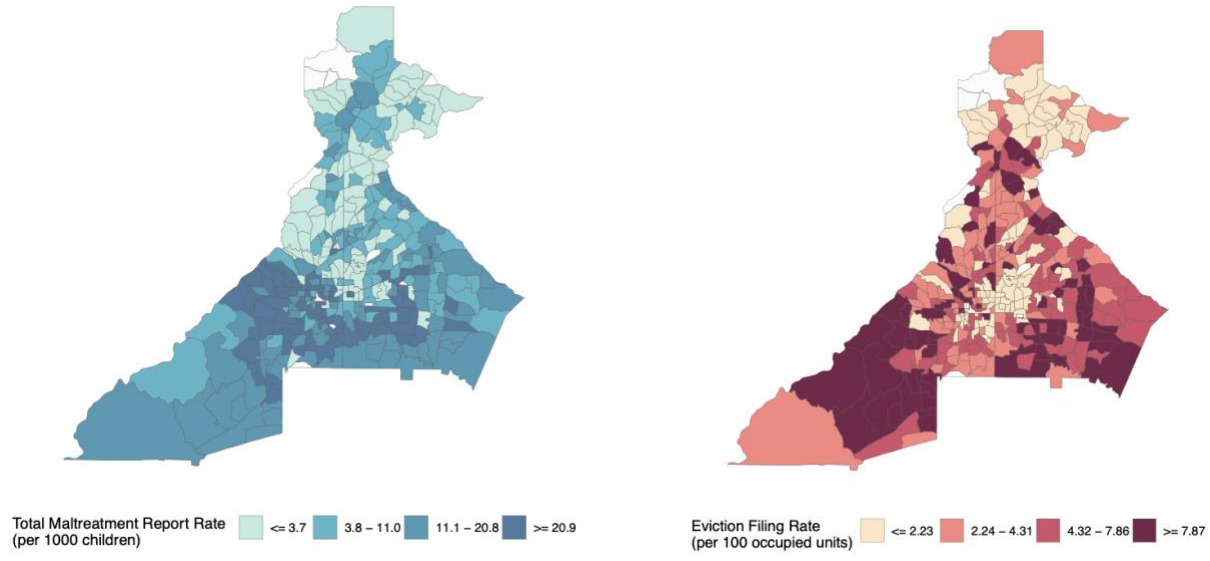

Figure 4. Total Maltreatment Report Rates and Eviction Filing Rates by Census Tract

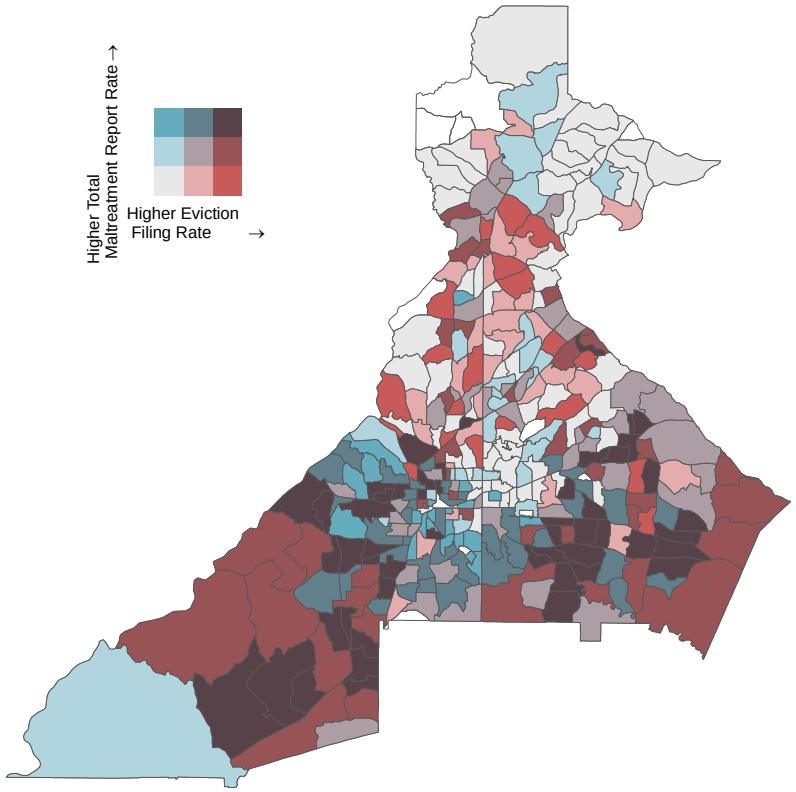

Figure 5. Crude Association between Eviction Filing Rate and Total Maltreatment Report Rate in DeKalb and Fulton County, May to December 2020.

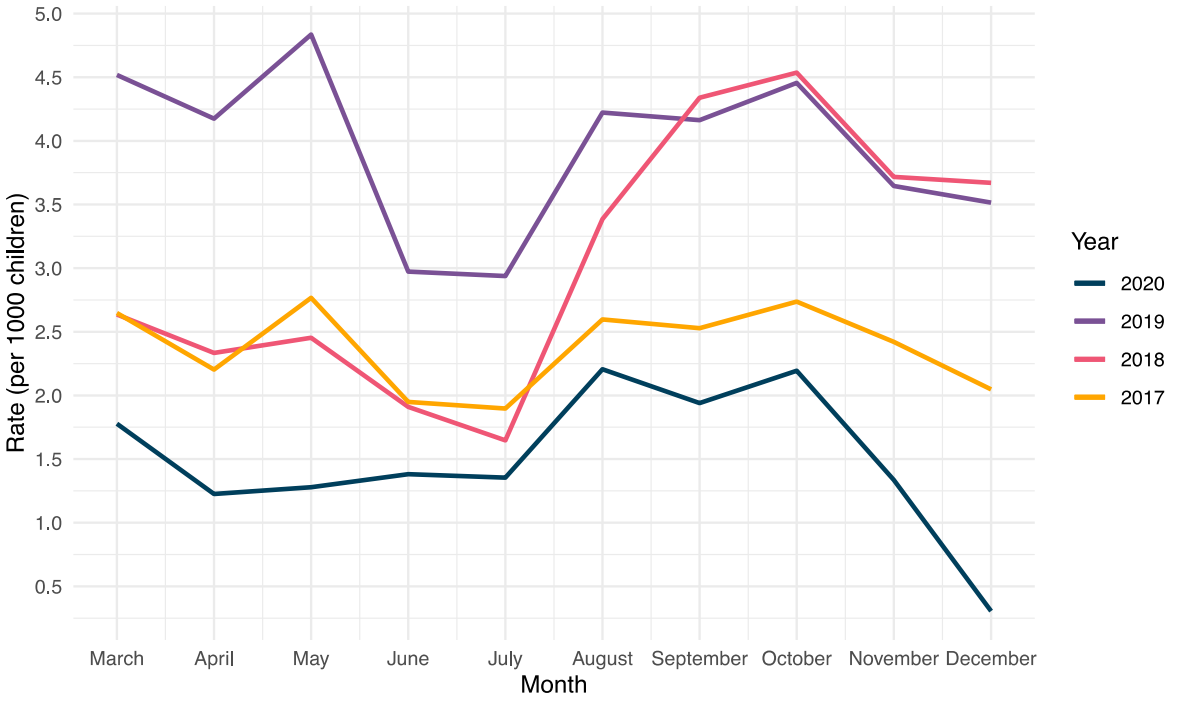

Figure 6. Monthly Total Maltreatment Report Rates in DeKalb and Fulton County, 2017-2020.