

RESEARCH BRIEF

Intergenerational Child Maltreatment and MCA Proficiency among 3rd through 8th Graders

PURPOSE OF THE STUDY

The purpose of this study was to examine whether children in families experiencing child maltreatment across multiple generations differ in MCA proficiency from maltreated children whose parents were not maltreated.

BACKGROUND & PURPOSE

Child maltreatment (CMT) is highly prevalent in the United States. In Minnesota, there were 20,167 accepted reports of CMT in 2014 (MNDHS, 2015). A recent study estimated that a child born in the US in 2011 has a one in eight chance of being involved in a child protection report substantiated by child protective services (CPS; Wildeman et al, 2014). However, many reports are addressed via Differential Response – a child protection response not requiring substantiation – which potentially increases a child’s chances of CPS involvement (Hughes, Rycus, Saunders-Adams, Hughes & Hughes, 2013). Demographic risk factors are associated with CMT (i.e., race, income, age of child), but identifying direct causes of CMT is complex (MNDHS, 2015; USDHHS, 2016). A parent’s history of CMT is considered a risk factor for becoming an offender, also called intergenerational child maltreatment (IMT). Though IMT has been widely studied, little existing research is rigorous enough to support or refute this claim (Ertem, Levanthal & Dobbs, 2000). One approach with potential contribution is to study IMT and its impacts using a public health approach, focusing on populations rather than individual families.

Prior research has studied the association between CMT and educational outcomes in Minnesota (Piescher, Colburn, LaLiberte & Hong, 2014). Studies of associations between CMT and education often focus on later stages of development (i.e., high school graduation, college). Some scholars, however, argue that childhood and adolescence are developmental stages where the strongest potential impacts can be made (Stone 2007).

This study builds upon prior research by examining the association between IMT and MCA proficiency among Minnesota 3rd through 8th graders using linked administrative records. This study addresses the following research question:

Among 3rd through 8th graders, does MCA proficiency vary by the number of generations experiencing CMT?



A PARENT’S HISTORY OF EXPERIENCING MALTREATMENT AS A CHILD IS OFTEN CONSIDERED A RISK FACTOR FOR BECOMING AN OFFENDER; ALSO KNOWN AS INTERGENERATIONAL CHILD MALTREATMENT (IMT). THOUGH IMT HAS BEEN WIDELY STUDIED, LITTLE EXISTING RESEARCH IS RIGOROUS ENOUGH TO SUPPORT OR REFUTE THIS CLAIM.

METHODS

Children's education records were linked with child protection records to understand the association between intergenerational child maltreatment and children's academic achievement. Three maltreatment experiences were used in this study – Never maltreated (no CMT), child maltreated (CMT), and both parent and child maltreated (IMT).

FINDINGS

The association between CMT and MCA math proficiency revealed a graded relationship; a child's odds of demonstrating proficiency in math and reading decreased with each additional generation experiencing CMT within the child's family. This association was reduced after adjustment for demographic confounders but remained statistically significant.

Through Minn-LInK, CPS records from 2000 - 2014 were linked to Minnesota Automated Reporting Student System (MARSS) and Minnesota Comprehensive Assessment (MCA-III) records for academic year 2013 - 2014. Maltreatment was defined as involvement in an accepted CPS report between January 1, 2000 and March 1, 2014. Child maltreatment was classified into three levels: never maltreated (i.e., no CMT), child maltreated (i.e., CMT), and both parent and child maltreated (i.e., IMT). The study population was defined as third through eighth grade students with both MARSS and MCA records. MCA scores were categorized based on proficiency for math and reading tests.

Inverse probability weighting was used to minimize confounding by race, ethnicity, disability, socioeconomic status, and resident school district (Hernán & Robins, 2006). Demographics are presented in Figure 1. Odds ratios from logistic regression models estimated the association between IMT and MCA proficiency in math and reading. Children not involved with CPS were the referent group. Odds ratios represent the relative likelihood of proficiency in one group when compared to another group. For example, an odds ratio of 3.0 means three times greater odds.

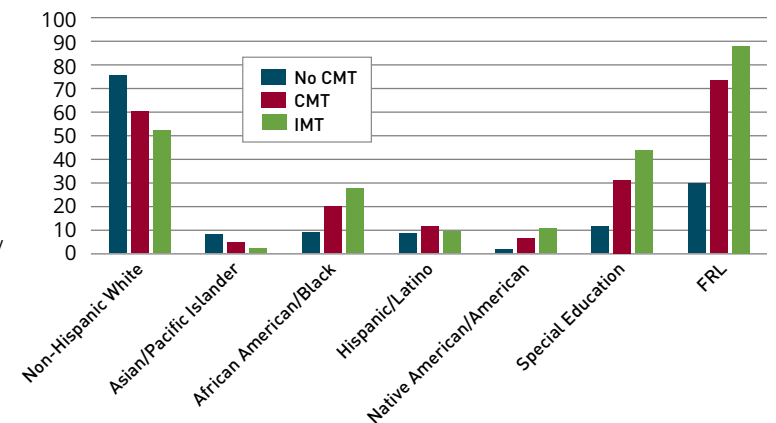
INTERGENERATIONAL MALTREATMENT & RACE, POVERTY, AND DISABILITY

Results showed substantial demographic variability between children in public schools who had contact with CPS and children who did not. Patterns of maltreatment differed across race and ethnicity (see Figure 1). African American and Native American families had the highest probability of experiencing IMT; White and Asian

families had the lowest probability; and Latino families had similar proportions of families with CMT and IMT ($\chi^2=19,000, p<0.001$). A comparatively small number of Asian students experienced maltreatment, especially IMT (N=13 with MCA scores). After testing for balance on covariates after analysis, high remaining variability among Asian students suggested that results among Asians were not consistent (potentially due to small sample sizes or high intra-group variability). To avoid presenting inaccurate or biased results, Asian students were excluded from the final analysis.

Patterns of maltreatment differed between levels of socioeconomic status (i.e., eligibility for free or reduced price lunch); low-income families were more frequently represented in both the CMT and IMT groups, while families ineligible for free or reduced price lunch were less frequently in contact with CPS ($\chi^2(2)=59,000, p<0.001$). The distribution of maltreatment did not vary between grade levels, suggesting consistency within this developmental period ($\chi^2(5)=13.2, p=0.221$). Children with a disability during the academic year (i.e., those receiving special education services) were more frequently represented in both CMT and IMT groups; children without a disability status were more frequently represented in the no CMT group ($\chi^2(2)=21,000, p<0.001$).

Figure 1. Demographics of Study Sample



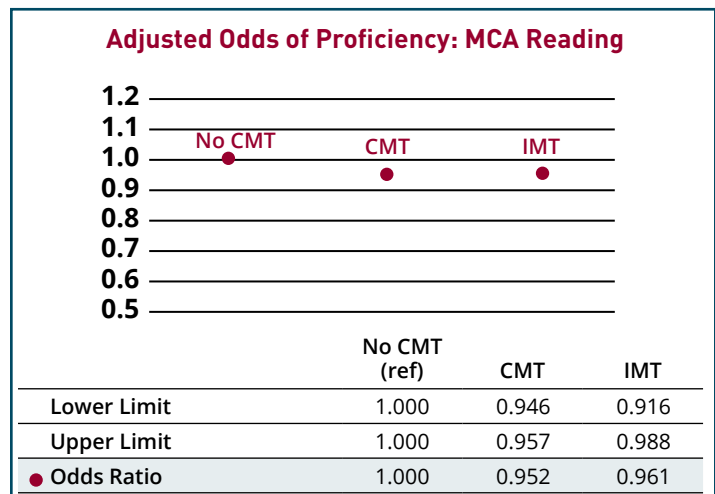
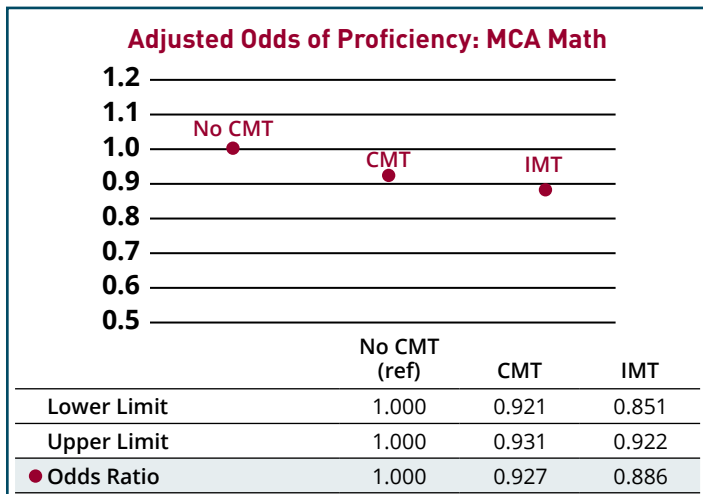
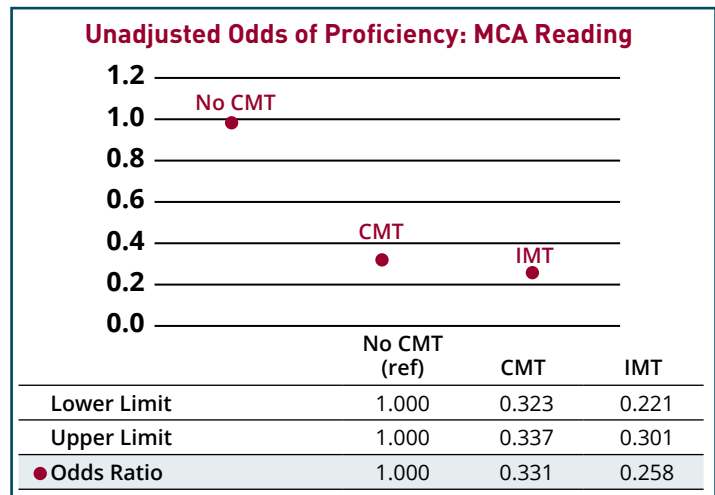
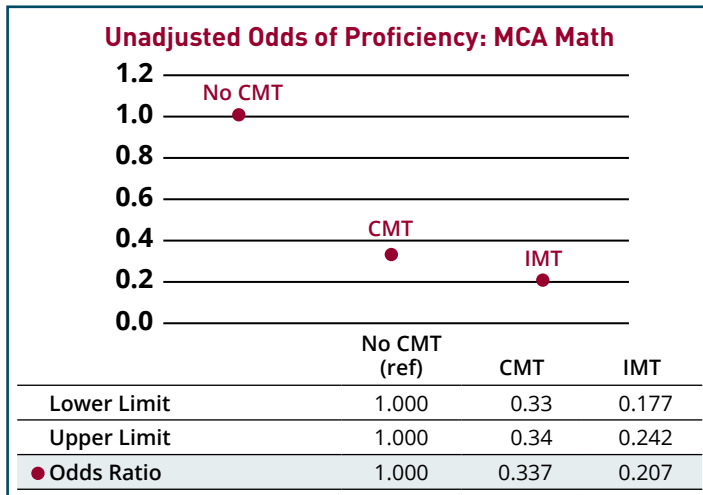
FACTORS ASSOCIATED WITH MCA PROFICIENCY

Prior to adjustment, a significant association between child maltreatment and MCA proficiency was evident (see Figure 2). Compared to public school students with no history of child maltreatment, children who were the first generation to have contact with CPS (i.e., experience CMT) had 66% lower odds of demonstrating proficiency in math (OR=0.34, $p<0.001$); children with intergenerational maltreatment had 79% lower odds of demonstrating math proficiency (OR=0.21, $p<0.001$). For reading proficiency, victims of CMT had 67% lower odds of demonstrating proficiency in reading (OR=0.33, $p<0.001$), victims of IMT had 74% lower odds of demonstrating reading proficiency (OR=0.26, $p<0.001$). After adjustment for covariates, these associations became weaker.

After adjusting for race, ethnicity, socioeconomic status, disability and resident school district, children who experienced CMT had 7% lower odds of demonstrating proficiency in math scores compared to non-maltreated

children (OR=0.93, $p<0.001$). Children who experienced IMT had 11% lower odds of demonstrating proficiency in math than non-maltreated children (OR=0.89, $p<0.001$). Children who experienced IMT had lower odds of proficiency than those who experienced CMT, even after statistical adjustment ($\chi^2(1)=4.69$, $p=0.03$). Compared to non-maltreated children, children who experienced CMT had 5% lower odds of demonstrating proficiency in reading (OR = 0.95, $p<0.001$), and children who experienced IMT had 4% lower odds of demonstrating proficiency in reading. Odds of reading proficiency did not differ between children who experienced CMT and children who experienced IMT ($\chi^2(1)=0$, $p=0.955$). In all analyses, standard errors for the IMT group were larger than standard errors for other groups, suggesting that results may be less consistent within this group. This may be due in part to the difference in sample sizes between groups. However, testing suggested that after inverse probability weighting, confounding variables were similarly distributed within each level of maltreatment.

Figure 2: Logistic Regression Results Before/After Adjustment, Intergenerational Child Maltreatment and MCA Math and Reading Proficiency



Conclusion

Results of this study support previous research suggesting that children who become involved with CPS are at an academic disadvantage as compared to their non-CPS-involved peers (e.g., Piescher et al., 2014, Stone, 2007). Further, it appears that IMT experiences are more strongly (and negatively) associated with MCA proficiency than a single generation's experience of CMT. However, interrelation between demographic factors, CMT, and MCA proficiency means these results should be interpreted as preliminary and descriptive.

In light of these findings, it is important for child welfare practitioners to find opportunities to interrupt cyclical adversity. Educators can benefit from understanding that experiences of trauma may transfer across generations and be interrelated with education, health, and behaviors. Incorporating a trauma-aware lens into educational practice and strengthening collaborations between education and child welfare may further support children who are CPS-involved.

This study is the first, to our knowledge, to examine the association between IMT and education in adolescence using administrative records in Minnesota. Strengths of this study include using a statewide sample over 15 years and rigorous statistical methodology. Yet, study limitations should be considered in the light of providing evidence with direct relevance to practice. These preliminary results provide a foundation to build upon in the study of IMT and its impacts. Future research is needed to: 1) examine the association between CMT, IMT, and achievement longitudinally; 2) include a larger number of students, particularly Asian students; 3) examine additional dimensions of wellbeing and education, such as school mobility; 4) more closely examine intrafamilial factors, including more information about caregivers' education; and 5) include maltreated parents of non-maltreated children.

LIMITATIONS

Data about parents' education was not available. Parents of children without CPS contact were classified as never-maltreated but some may have been misclassified due to age, growing up outside of Minnesota or CPS detection. Unmeasured maltreatment among children in the non-CPS group may exist due to detection bias. The exclusion of Asians from this study prevents any inference to this group. The statistical model may have had unmeasured confounding or been misspecified. Children who opted out of MCA testing may differ from the study population in important ways; students who experienced CMT were more likely to have missing MCA scores ($\chi^2 = 115.9, p < 0.001$). The cross-sectional and observational nature of this study prevents causal inference.

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