How Does School Violence Affect Immigrant and Native-Born Children? Exploring Impacts on Mental Health and Academic Outcomes

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Abstract

This paper uses simultaneous equation model to investigate the structural framework about how school violence affects academic outcomes through the impacts on mental health for native-born American and immigrant children. We highlight that preventing school violence can improve mental health and academic performance, thus promoting generational social mobility. Analyzing the 2022 National Survey of Children's Health (NSCH 2022), we find that immigrant children are generally less involved as bullies or victims than native-born children. Yet, children in white immigrant or low-income families are more susceptible to school violence. Immigrant children are mentally healthier compared to native-born children, except for white immigrants. Being bullied increases mental issues. This effect is larger among immigrant children compared to native-born children. While immigrant children perform better than native-born children academically, those from white immigrant families show worse academic performance. Mental health improves school performance but this link is weaker in immigrant children.

Introduction

Status Quo of School Violence, Mental Health, and Academic Performance
- School violence, particularly bullying, remains a global challenge, affecting over 30% of students worldwide (UNESCO).
- Exposure to such violence is linked to serious psychological issues, including anxiety and depression, which can hinder academic performance and long-term outcomes (Espelage & Swearer, 2003; Nansel et al., 2001).

Research Question and Contribution
- How does school violence, whether as a perpetrator or a victim, impact mental health and, in turn, influence academic outcomes differently for native-born and immigrant children?
- We advance current understanding by introducing a new empirical framework that highlights the differential impacts on immigrant and native-born children.

Data: 2022 National Survey of Children's Health (NSCH)
- The survey covered 54,103 children, with a final analytical sample of 18,943 children.
- Immigrant children comprise 21.96% of the sample (4,160 children), while the remainder are native-born.
- Perpetrators (children who bully others) make up 14.72% of the sample (2,789 children) and victims (children who are bullied) account for 41.38% of the sample (7,838 children).
- Among perpetrators, **91%** of them are victims as well!
- Children diagnosed with depression or anxiety account for 16.24% of the sample (3,077 children).
- Grades are categorized by frequency of letter grades: "Mostly D or lower," "Mostly C's and D's," "Mostly B's and C's," "Mostly A's and B's," and "Mostly A's."

School Violence → A perpetrator or a victim / Immediate and long-lasting effects → Mental Illness → With educational environment / Shape learning engagement and effectiveness → Academic Performance

Figure 1: Effects of School Violence on Academic Performance via Mental Illness

Simultaneous Equation Model

Model of School Violence, Mental Health, and Academic Performance

- **School Violence Equations** (Ordered Probit Model)

$$\begin{cases} bully_i^* = migrated_i\beta_{11} + X_{i1}\beta_{12} + \epsilon_1 \\ bully_i = m \text{ if } C_{1m} \leq bully_i^* \leq C_{1,m+1} \end{cases}$$

$$\begin{cases} bullied_i^* = migrated_i\beta_{21} + X_{i2}\beta_{22} + \epsilon_2 \\ bullied_i = m \text{ if } C_{2m} \leq bullied_i^* \leq C_{2,m+1} \end{cases}$$

- **Mental Health Equation** (Probit Model)

$$mental_i^* = bully_i^*\beta_{31} + bullied_i^*\beta_{32} + X_{i3}\beta_{33} + \epsilon_3$$

$$mental_i = \begin{cases} 1, & \text{if } mental_i^* > 0 \\ 0, & \text{if } mental_i^* \leq 0 \end{cases}$$

- **Academic Performance Equation** (Ordered Probit Model)

$$\begin{cases} grade_i^* = mental_i^*\beta_{41} + X_{i4}\beta_{42} + \epsilon_4 \\ grade_i = m \text{ if } C_{4m} \leq grade_i^* \leq C_{4,m+1} \end{cases}$$

Note: To address the potential endogeneity of school violence in relation to mental health outcomes, we incorporate **latent variables** and **their interactions with immigrant status** within our mental health framework. These latent variables serve as proxies for the unobserved true values of school violence on mental health. We also use parents' mental health status as instruments. We apply a similar approach in the academic performance equation.

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Results

Section I: School Violence (Ordered Probit Results for Bullying and Being Bullied Equations)

Demographics and family factors affecting the probabilities of frequency of school violence：
- Bully: Girl (-0.061), Black (-0.245), White (-0.01), Age (peak at 7.8 yrs old), Parent divorced (0.415), Parent in jail (0.251).
- Being bullied: Girl (0.081), Black (-0.194), White (0.054), Age (peak at 9.4 yrs old), Parent divorced (0.252), Parent in jail (0.272).

Immigrants' children tend to be **LESS** involved in school violence.
- For immigrants' children not engaged in any school violence, the likelihood of not being bullied is 11.4% and the likelihood of not engaging in bullying others is 7.2%.

Section II: Mental Health (Probit Results for Mental Health Equation)

Demographics and family factors affecting the probability of having mental illness:
- Girl (0.518), Black (-0.204), White (0.267), Age (peak at 16.1 yrs old), Live w/ mental illness (0.350).
- When parents have mental illness, children are more likely to experience mental health issues, with a stronger effect observed from the mother.

Being bullied increases the probability of having mental health issues, while bullying others decreases the probability of having mental health issues.
- Compared to native children, immigrant children face a **HIGHER** risk of mental illness if they are bullied and a **LOWER** risk if they bully others.

Immigrants' children on average have **LOWER** likelihood of having mental illness issues.

Section II: Academic Performance (Ordered Probit Results for Grades Equation)

Demographics and family factors affecting the probability of having mental illness:
- Girl (0.186), Black (-0.453), White (0.100), Age (peak at 14 yrs old).
- When parents have higher level of education, their children tend to have higher grades, with a stronger effect observed from the father.

Mental illness decreases the likelihood of achieving higher grades but this effect is **SMALLER** among immigrants' children.
- Compared to native children, immigrants' children tend to have **HIGHER** likelihood to obtain better grades.

Figure 2: Average Marginal Effects of Bullying/Being Bullied for Immigrants' Children
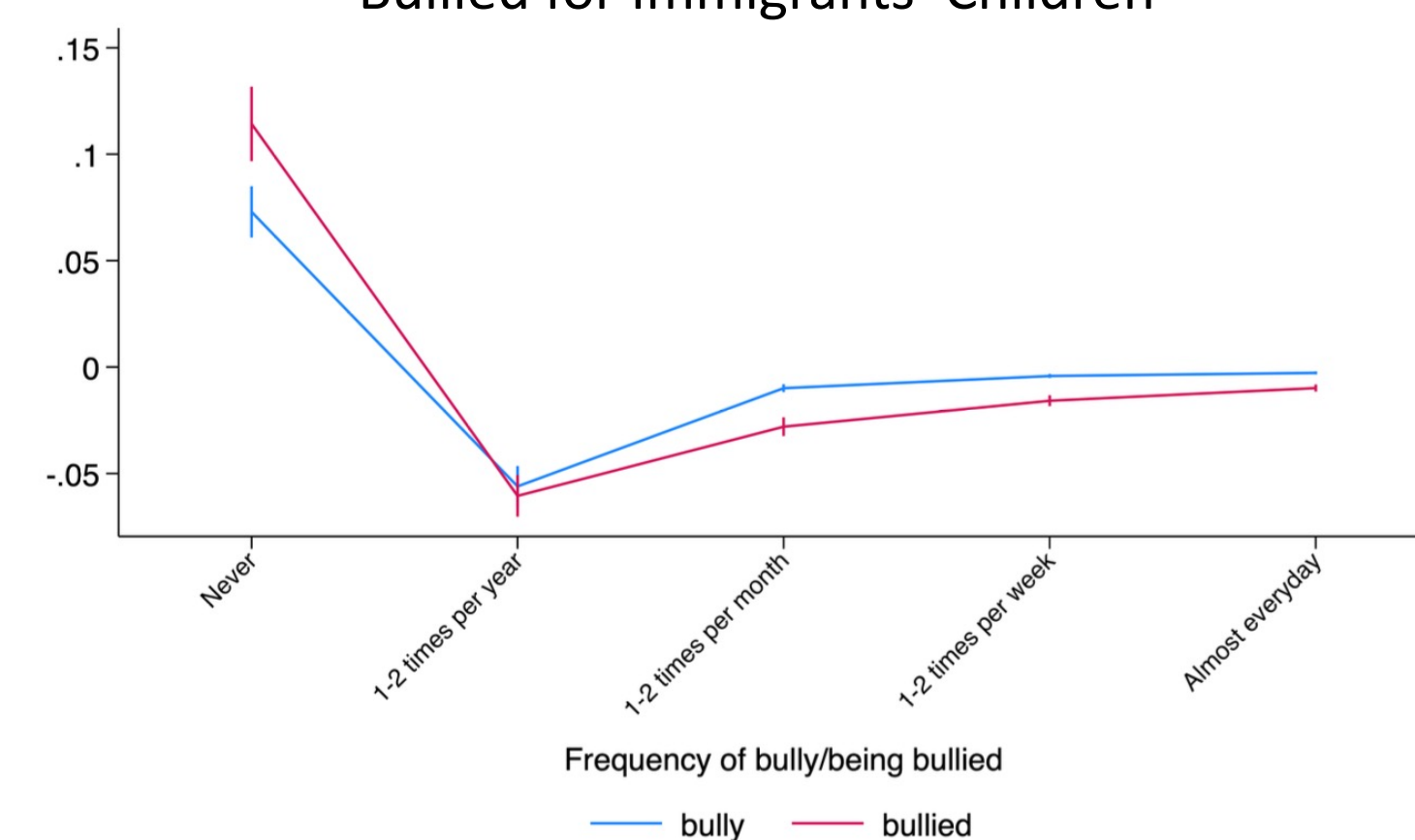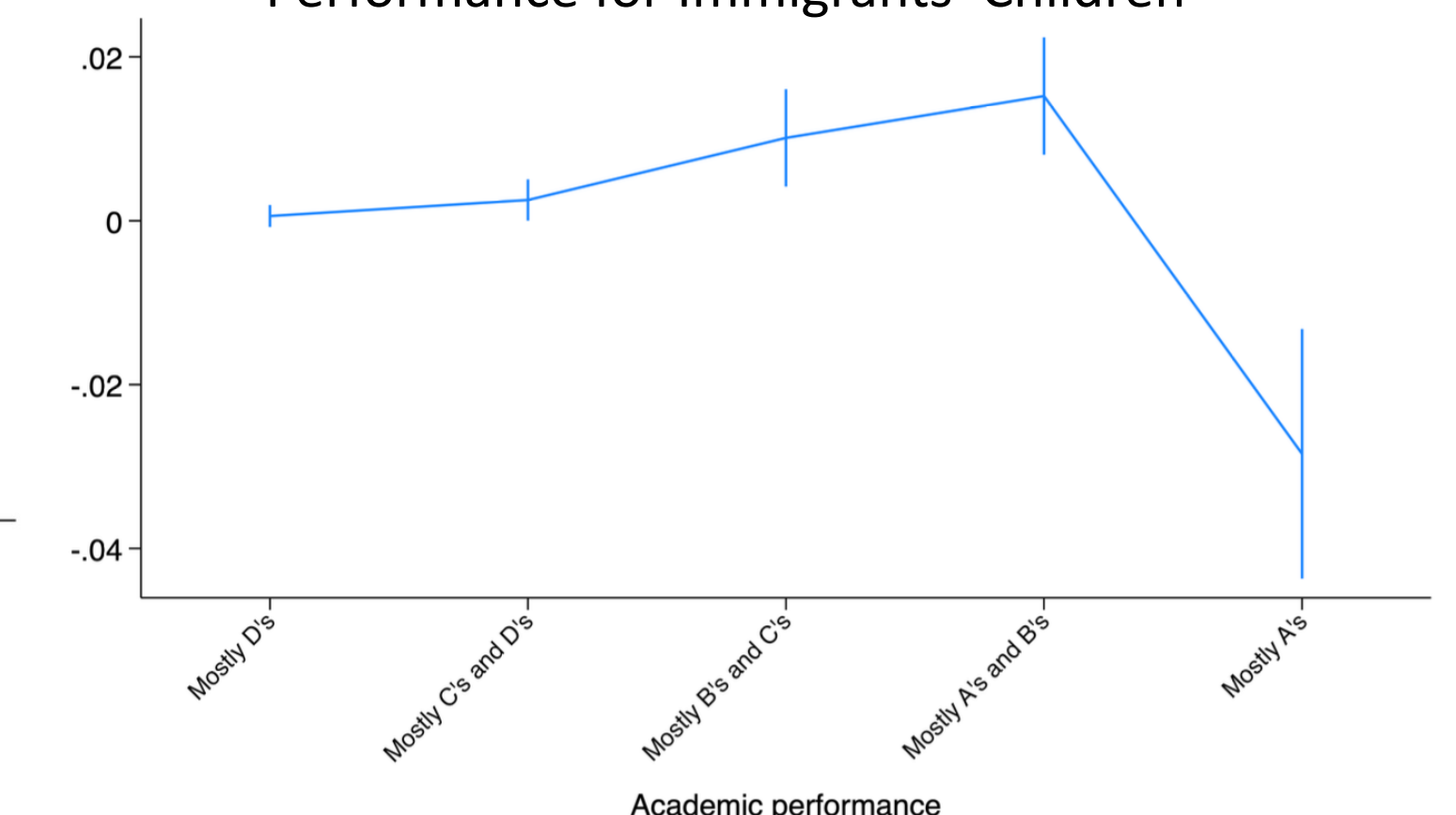

Figure 3: Average Marginal Effects of Academic Performance for Immigrants' Children

Discussions and Counterfactuals

Mental illness has smaller effect on academic performance for immigrants' children, why?
- Families' expectation: 62.26% of immigrant families prioritize children's academic performance compared to 55.12% for native families.
- Overlooked mental health: Immigrants' children may have undetected mental illnesses due to limited awareness of mental health and inadequate access to resources, or social stigma.

When immigrants' children experience the same mental health effects as native children, additional 4.42% of immigrants' children are more likely to receive lower grades.

Conclusions

- Using a simultaneous equation model, we examine how school violence differentially affects academic performance in native and immigrant children, via the mental health channel.
- We extend the current literature by adopting a new empirical framework to connect three outcomes while accounting for essential family factors.
- **Our key findings**: compared to native children, immigrants' children are
  - less likely to involve in school violence;
  - more vulnerable to the effects of school violence on mental health;
  - less sensitive to the effects of mental health on academic performance.
- **Limitations**: the effects of mental health on academic performance are diluted for immigrants' children due to unobserved issues, such as low awareness of mental health issues, low access to mental health services, social stigma, under-reporting, etc.
- Anti-bullying policies should reflect students' diverse backgrounds, with more accessible support and increase awareness of available resources for immigrant children.

References

1. Dorothy L Espelage and Susan M Swearer. Research on school bullying and victimization: What have we learned and where do we go from here? School psychology review, 32(3):365–383, 2003.
2. Tonja R Nansel, Mary Overpeck, Ramani S Pilla, W June Ruan, Bruce Simons Morton, and Peter Scheidt. Bullying behaviors among us youth: Prevalence and association with psychosocial adjustment. Jama, 285(16):2094–2100, 2001.
3. Bonnie D Kerker, R Gabriela Barajas-Gonzalez, Natalia M Rojas, Jennifer M Norton, and Laurie M Brotman. Enhancing immigrant families' mental health through the promotion of structural and community-based support. Frontiers in Public Health, 12:1382600, 2024.
4. Margarita Alegría, Tiffany Yip, Amy Marks, Linda Juang, Lauren Cohen, and Fernando Cuervo-Torello. Improving mental health for immigrant populations. Frontiers in Psychiatry, 12:785137, 2021.