Healthy Schools as Learning Tools?
An Empirical Analysis of the Effects of Healthy CPS on Academic Performance of High-Immigrant Schools

By
Emma Badia

Submitted in partial fulfillment of the requirements for the degree of
Bachelor of Arts in Public Policy Studies at *The University of Chicago*

Preceptor: Sol Lee

Second Reader: Professor Jane Ramsey

April 24, 2020

Abstract

This paper examines the effects of Chicago Public Schools' Healthy CPS program on school-level academic outcomes. At the time of writing, CPS has not published any research on the effectiveness of Healthy CPS. Inspired by empirical evidence indicating strong links between socioeconomic status, health levels, and educational achievements, I investigate the possibility of disparate outcomes for demographically different types of schools. I implement an analysis of variance (ANOVA) quantitative research design to measure the relationship between a school's Healthy CPS certification status and the school's Northwest Evaluation Association Measures of Academic Progress (NWEA MAP) math and reading attainment percentiles and School Quality Rating Policy (SQRP) score. I perform this analysis for all elementary schools, schools identified as "high-immigrant," and schools identified as "low-income/low-immigrant." I find that for all elementary schools and for low-income schools, there exists a consistent and statistically significant relationship between participation in Healthy CPS and relatively high academic performance. For high-immigrant schools, no such relationship exists. Drawing on this finding, as well as background information and anecdotal evidence regarding immigrant communities in Chicago and the experiences of the comparable Los Angeles Unified School District, I recommend that CPS make its health interventions more equity-focused. Specifically, I recommend merging School-Based Health Centers and school Medicaid Designees and allowing for increased flexibility in certain Healthy CPS food control standards. Further areas of research can more accurately predict the effectiveness of these recommendations by isolating causal mechanisms that explain the empirical findings of this paper.

Table of Contents

Introduction

At Chicago Public Schools, we believe every student deserves to feel welcome, safe and valued… every child, regardless of race, ethnicity, or national origin is treated with dignity and respect from the moment they enter our schools.

- Chicago Public Schools website

In this paper, I analyze the effects of Chicago Public Schools' Healthy CPS program on the academic outcomes of CPS elementary schools, with a focus on schools where a high proportion of students come from immigrant families. Immigrants in the United States face well-documented barriers to healthcare, and health is a well-known predictor of academic performance (Durden 757, Haas and Fosse 188-190, Levine and Schanzenbach 8-9, Walker et al. 95). Politicians and educational administrators often use school-based interventions to promote good health's educational benefits (Heath et al. 275). At the time of writing, CPS has published no research on the results of its own program, Healthy CPS. These factors inspire the main research question explored in this paper: what effect does Healthy CPS have on academic performance, in particular for students from immigrant families?

In order to study these topics, I employ a quantitative methodology to examine group differences in academic outcomes between schools of different Healthy CPS certification statuses. I perform this analysis for all CPS elementary schools, for schools with an especially high proportion of students from immigrant families, and for a comparison group of schools with a predominantly low-immigrant and low-income student body. With this research design, I aim to isolate challenges specific to students from immigrant families with regards to this policy.

This research can help inform the general literature on the health-education link, as my analysis utilizes a specific health intervention policy as a case study of school-based programs. If Healthy CPS indeed positively correlates with improved educational outcomes, then this analysis supports the hypothesis that school-based health initiatives effectively combat health barriers to

educational achievement. My analysis also has implications for the study of health and education equity. I focus on specific subgroups of schools that display certain demographic characteristics in order to ascertain whether or not the policy affects all members of a diverse student body. Do school-based health policies actually improve students' academic performance, do they reach the students that need such support the most, and do they have the same effects for different student populations? All of these questions are important ones for policymakers to consider as they attempt to address disparities in healthcare and in education outcomes.

Background

Chicago Public Schools

The third-largest school district in the United States, CPS currently serves 355,156 students for the 2019-2020 school year ("Table 215.30," "CPS Stats and Facts"). Of these students, 35.9% are African American, 46.6% are Hispanic, 10.8% are white, and 4.2% are Asian ("CPS Stats and Facts"). These racial/ethnic breakdowns remain constant across grade levels and between elementary and high schools (*Demographics_RacialEthnic).* Moreover, 18.8% of students are bilingual.[1] Thus, the majority of CPS students are children of color, and a significant portion of them are from immigrant families, as indicated by the high percentage of bilingual students.

Information about the CPS student body suggests that health interventions may be especially useful for Chicago schools. CPS students have many health needs related to both their

[1] "Bilingual" refers to students classified as English Learners. English Leaners are students who speak a language other than English at home, earn subpar scores on English proficiency exams, and consequently are enrolled in English as a Second Language (ESL) classes. Therefore, the percentage of bilingual students is equivalent to the percentage of students in ESL classes due to their speaking a non-English language at home (*Demographics_LEPSPED*, "English Learner Programs").

current health status and their ability to procure healthcare from resources other than school. For example, 43.3% of students are obese or overweight (relevant to the issue of immigrant students, the rate is 48.9% for Hispanic students [*Overweight and Obesity*]). A quarter of CPS students have a chronic disease like asthma or diabetes ("Conducting Health & Wellness Research"). Many students also face difficulty accessing care, with 76.4% classified as economically disadvantaged[2] and 87% enrolled in Medicaid ("Conducting Health & Wellness Research," "CPS Stats and Fact").

Additional evidence indicates that CPS schools often fail to meet student health needs, which means students are both high-need and underserved. It is estimated that only 50% of CPS students with a food allergy, and 25% with asthma, have a school health management plan on file, and that one key reason for this is insufficient availability of school nurses (Rivkina et al. 4, 7). Parents commonly cite a lack of communication from the school as another reason for missing management plans, and language barriers in high-immigrant schools can exacerbate this issue (Rivkina et al. 7).

Healthy CPS

CPS has tried to mitigate student health challenges by implementing policies such as Healthy CPS. Healthy CPS gives each CPS school one of three statuses: Healthy Schools Certified, Pending Certification, and Not Certified. In order to achieve the Healthy Schools Certified designation, schools must accomplish benchmarks in the areas of chronic disease (have protocol in place for students with conditions like diabetes or asthma), instruction (teach

[2] CPS defines an "economically disadvantaged" (and "Low Income") student as a student who is eligible for free or reduced-price school meals from the National School Breakfast and Lunch Program. Students qualify for free meals if their families make up to 130% of the federal poverty guideline; they may receive reduced-price meals if their families make between 130% and 185% of the federal poverty guideline (*Demographics_LEPSPED,* "Child Nutrition Programs").

nutrition, physical education, and sexual health), "learnwell" (cultivate an environment in which healthy behaviors are encouraged, e.g. teachers do not use food as a reward), and health services (dental, vision, and hearing screening, as well as having a Medicaid Designee on staff who helps families receiving Medicaid access healthcare services). A school must accomplish 90% of the benchmarks to earn Certified status. Pending schools have initiated certification efforts but have yet to meet the 90% requirement, and Not Certified schools have not involved themselves in the certification process at all ("Healthy CPS Indicator Checklist"). A full list of the Healthy CPS requirements can be found in Appendix A.

Healthy CPS aims to consistently evaluate school-based health education and service provision initiatives, as well as complement the city-wide Healthy Chicago plan ("Healthy CPS on School Progress Report Card"). While Healthy Chicago identifies health equity and social determinants of health as two of its guiding principles, which is in line with a more general recent movement toward a "Health in All Policies" ecological approach to public health, the Healthy CPS plan lacks any mention of health access issues ("Healthy Chicago 2.0"; Polsky at al. 52). Rather than implement a top-down district-wide timeline detailing which schools will implement the reform first, CPS expects schools to self-select into the program. In fact, CPS publishes materials that explain to parents how to advocate that their principal become involved with the Healthy CPS process, which highlights the voluntary nature of the system ("Healthy CPS on School Progress Report Card"). Thus, it is not evident from the structure of the program that Healthy CPS focuses on the schools with the greatest health needs.

Immigrants in Chicago

Chicago has always been a hub for immigrants, and many neighborhoods reflect this history and its contemporary manifestations (Hall and Lubotsky 2, 7). Over half a million

Chicagoans are of Mexican descent alone, and a fourth of them are undocumented (Glass 1:10-1:16). While the population of the city as a whole is heavily immigrant, immigrants do tend to cluster in certain neighborhoods ("Profile" 1). In twelve Chicago community areas (out of 77) Latinos are the largest ethnic group and the Latino population numbers at least 25,000, with most of the population growth stemming from post-1980 immigration (Acosta-Córdova 5). These statistics demonstrate that the recent Latino immigrant population in Chicago is both large and highly concentrated in specific residential areas of the city.

Since most of these neighborhoods also have a high proportion of residents who are children and/or part of families, such clustering has important implications for school population composition ("Map of Household Types"). For example, in the heavily Latino Back of the Yards neighborhood, 52.1% of the population belongs to a household of three or more persons, and 32.7% of the population is 19 years old or younger, both of which reflect higher proportions of families with children than Chicago city averages ("Community Data" 3, 5). These residential and demographic patterns result in schools in which the vast majority of students come from immigrant families. Thus, the immigrant student population is not only large in absolute numbers; immigrant students also tend to attend schools in which they make up a majority of the student population.

Local and Federal Immigration Policy Context

In general, Illinois is a relatively immigrant-friendly state. Even undocumented immigrants can participate in mainstream institutions through measures like the Temporary Visitors Driver's License, and in 2019 the Illinois Board of Education issued an explicit statement that legal status should not impair children from receiving education in public schools (Vinicky). New leadership in Illinois and Chicago—Governor J. B. Pritzker and Mayor Lori

Lightfoot—also signals positive changes in the lives of immigrants. In 2019, Governor Pritzker signed into law the RISE Act, which allows public universities in Illinois to give undocumented students financial aid, and Mayor Lightfoot announced a total cessation of Immigration and Customs Enforcement access to Chicago Police Department databases that same year (Vinicky). These recent measures indicate that CPS is situated within an environment where students from immigrant families are more securely able to access local resources like public schools.

However, as of 2020, controversy remains over whether or not these reforms actually create a safer environment for immigrants in practice. One incident in Back of the Yards sparked a particularly fierce outcry in 2019 after ICE agents conducting a traffic stop called for police backup and claimed to be in danger. Upon arrival at the scene, police found that the ICE agents actually faced no immediate threats, which prompted many community members to accuse ICE of manipulating CPD protocol in order to get around Chicago's sanctuary city laws (Peña and Cherone). This event makes clear that the implementation challenges of immigration policy have important ramifications for the lives of immigrants in Chicago and their interactions with street-level bureaucrats like police officers. It is not difficult to imagine accompanying apprehension around accessing local education or health institutions.

Post-2016 immigration policy changes at the federal level have intensified immigration rights activists' worries, and many of the most controversial changes impact the provision of healthcare and other social services. In 2018, the Trump administration's proposed changes to the public charge test for determining eligibility for citizenship sparked a reduction in medical service acquisition from immigrant families. The proposal, later blocked by federal court, would have ruled citizenship applicants a "public charge" on the country if they or their children (even if their children were citizens) used any of a long list of government services like food stamps,

Section 8 housing vouchers, and Medicaid (Narea). Many families withdrew collection of these benefits out of fear of negative repercussions. According to one Urban Institute study, 17.4% of immigrant families with children younger than 19 reported avoiding benefits programs in the wake of this policy change (Bernstein et al.). In this way, immigration policy can have significant impacts on healthcare access (and, as a result, actual health outcomes) for immigrant populations.

Literature Review

Healthcare Among Immigrants in the U.S.

Even without the policy changes outlined in the previous section, many immigrant families struggle to access adequate care for both parents and children. Undocumented immigrants, who make up a significant part of Chicago's immigrant population, face these issues to an even higher degree. Nationally, 23% of documented immigrants, and 42% of undocumented immigrants, are uninsured—compared to only 8% of citizens ("Health Coverage of Immigrants"). Mental health concerns are also widespread among this population, but both institutional and psychosocial barriers prevent many from accessing the care they need (Hainmueller et al. 1042, Cha et al. 194, 198).

Families with young children face an even more pressing situation. One study of families in Los Angeles reveals that while 90% of children in native-born American families have some sort of health insurance, only 75% of children in immigrant families do, and this proportion drops to 33% for children in undocumented families. Indeed, undocumented families face particular challenges with accessing preventive care, as evidenced by the fact that 37% of undocumented families in the Los Angeles survey have no regular source of care (e.g. a family doctor) and only 21% report having seen a dentist in the past year (Gelatt 545). National surveys

demonstrate that Latino families report using a clinic or emergency room as regular sources of care at higher rates than non-Latino white families, and the rate is significantly influenced by maternal nativity and immigration status (Durden 757).

There are myriad reasons for these disparities. In a survey of 300 Latino households, most of whom recently immigrated to the U.S., Walker et al. find that low socioeconomic status, low educational attainment, and limited English proficiency all contribute to low coverage rates (95). The responses make clear that while some healthcare access issues arise out of problems shared by immigrants and other marginalized groups (e.g. low socioeconomic status), others are specific to immigrants in the U.S. (e.g. the necessity, in most places, of English proficiency to communicate with a healthcare provider). Still others are not unique to immigrants but are highly magnified in degree for them. For example, many groups in the U.S. face difficulties acquiring a quality education, but for immigrants who grew up in countries with less developed public education infrastructure, many have not even completed high school, which is less common for marginalized native populations ("Table 104.40"). This combination of factors and their varying uniqueness to immigrants makes it difficult to know which policy interventions would be most effective for children from immigrant families in schools.

Health Effects on Education Outcomes

These inequities matter for education. Students with poor health measures tend to perform worse in school (and complete less school) than their healthier peers, even after controlling for confounders like socioeconomic status. Haas and Fosse find that among respondents to the 1997 National Longitudinal Survey of Youth, a one-unit decrease in health is associated with a 16% decrease in the odds of both timely high school completion and postsecondary enrollment (186, 188-190). The relationship between health and education

performance holds true both for behavioral health measures like a healthy diet and physical activity and for chronic health conditions (Fedewa 526-527, Neumark-Sztainer 501, Taras and Potts-Datema 259-260).

Furthermore, healthcare *access* in particular plays an important role in contributing to student performance. Levine and Schanzenbach find a significant positive relationship between a state's expansion of the Children's Health Insurance Program (CHIP) and average reading scores on the National Assessment of Educational Progress (NAEP), even after controlling for variations between states, over time, and across children's ages of coverage eligibility (8-9, 19). This indicates that healthcare programs can have direct impacts on the educational outcomes of the population they reach, presumably because some groups would have no access to care, and therefore worse health outcomes, otherwise. Levine and Schanzenbach's difference-in-difference research design allows them to make a causal claim about this relationship that goes beyond mere correlation.

Even given healthcare provision for some children, there is evidence that school communities experience negative spillover effects when some community members are uninsured. Timmermans et al. find that a lack of health insurance hinders individual students' performance in schools and induces harmful changes in the school's functioning that affect even insured students; for example, school nurses are forced to care for uninsured students who show up to school ill, which decreases their availability to perform more managerial roles for the school that help day-to-day matters run smoothly for all students (365-366). A significant under-resourced school population constitutes a challenge in and of itself regardless of any individual student's status because it can impact a school environment in ways that potentially affect educational outcomes for all students.

School-Based Health Provision Policies

Most school-based health provision programs have yielded generally positive results. Physical activity and nutrition education benchmarks seem especially promising. One study of French schools finds a significant decrease in student obesity and overweight in schools that implemented such reforms compared to schools that did not (Romon et al. 1738). In Germany, the provision of drinking fountains and classroom lessons on the benefits of drinking water have decreased the incidence of overweight among schoolchildren (Muckelbauer et al. 664). Indeed, global meta-analyses support the idea that curriculum changes appear to significantly impact student behavior (O'Dea 26, Sharma et al. 65-68). One worldwide study of physical activity interventions finds that school-based programs are particularly effective because of their consistent and mandatory nature (Heath et al. 275).

However, implementation challenges remain significant for schools, which were not originally intended to be sites of healthcare provision and must balance multiple goals around education and student wellbeing. Langley et al. find that schools across the country that have begun implementing Cognitive Behavioral Intervention for Trauma in Schools, a mental healthcare service, report significant implementation challenges. Often these challenges are specific to the school environment, as many respondents report competing responsibilities and the hectic, crisis-driven atmosphere of schools as barriers to successful implementation (109). Busch et al. find that successful implementation of school-based interventions requires significant effort on the part of the school, through measures like centralized coordination, teacher training, and attention to specific needs of the student population (519-520). Thus, school-based interventions have succeeded empirically but require careful attention to implementation details.

CPS Efforts to Improve Student Health

Anecdotal evidence supports the idea that schools function as important community sites in immigrant neighborhoods in Chicago, probably at least in part because of the high number of children and families in those areas ("Map of Household Types"). For example, Back of the Yards resident and community organizer Mayra López states that schools are an important base for her work, and she focuses on "building relationships to help organize from within the schools" (qtd. in Pando). Other community members express a similar confidence in the significance of schools. Groups like Healing to Action, which aims to end gender-based violence and is made up of Latina immigrant women, have publicly called for revisions to CPS's sexual education curriculum to include more information about sexuality and healthy relationships (Dukmasova). While their demands point to a shortcoming of the CPS sexual education material, the women's actions indicate that they have faith in schools as a site of responsive health education, in particular for Latino immigrant populations.

The effectiveness of CPS-based health initiatives for specific populations has not been studied rigorously—in fact, so far CPS has published no research on the effectiveness of Healthy CPS for any group, including the general CPS student body. While the policy is only a few years old, schools collect extensive academic performance data every year, so it is feasible to perform a point-in-time analysis of the relationship between Healthy CPS and educational outcomes. This is what the following analysis attempts to carry out.

Methodology

The Data

I employ a quantitative methodology in order to examine the extent to which Healthy CPS correlates with academic outcomes. I use CPS elementary school standardized tests scores

and internal district ratings that are publicly available on the city of Chicago website.[3] I focus on elementary schools because a higher proportion of high schools are charter schools or selective enrollment schools, so elementary schools more accurately demonstrate the effects of racial/ethnic/socioeconomic clustering in neighborhoods. Additionally, elementary school students take standardized tests more regularly than high schoolers, so there is a greater amount of consistently collected data for this group of schools. Given that there are significantly more elementary schools (469) than high schools (195), this limiting of the sample still leaves me with a large sample size ("CPS Stats and Facts"). The statistical analyses that I conduct, the specific subsets of schools that I identify, and the outcome measures that I use are discussed below, as well as methodological strengths and limitations.

The Statistical Tool

I use an analysis of variance (ANOVA) to compare the mean academic performance scores of schools that are Healthy Schools Certified, Pending Certification, and Not Certified. I utilize ANOVA because I have three groups of schools for which I want to compare average outcomes. It is standard practice in social science research to utilize ANOVA when data contains a continuous dependent variable (e.g. test score attainment percentiles) and a categorical independent variable (e.g. the Healthy Schools certification status). This method helps analyze real-world phenomena for which it is nearly impossible to design an experiment to test ("SSPS Tutorials"). I conduct the ANOVA for all elementary schools, schools I identify as high-immigrant, and schools I identify as low-income/low-immigrant. The inclusion of these three levels of analysis allows me to see if similar differences in outcomes between certification statuses are present in all types of schools.

[3] See "Outcome Measures" section for more detailed information on these data points.

Defining the Levels of Analysis

High-immigrant schools are defined, for the purposes of this study, as schools with a student body that is 30% or more bilingual. Most of these schools are predominantly Latino: 72% have a student body that is at least 75% Latino, and only 17% have a student body that is not majority-Latino. For reference, Chicago's population is 28.7% Latino, and 46.6% of CPS students are Latino, with 18.8% classified as bilingual ("ACS Demographic and Housing Estimates," "CPS Stats and Facts"). Given Chicago's large Latino population, as well as the fact that 83% of English Learners are Spanish speakers, this connection makes sense (Belsha).

Low-income/low-immigrant schools (referred to in this paper as just "low-income schools") have a student body that is 50% or more Low Income[4] and are *not* also high-immigrant schools. I isolate this second subset of schools because all of the high-immigrant schools are low-income (by my definition, i.e. all of the high-immigrant schools have a student body that is more than 50% Low Income), so I want to separate out income effects and any effects that stem from serving specific populations. Notably, the CPS student body is 35.9% black and 76.4% Economically Disadvantaged ("CPS Stats and Facts"). Given economic inequities like the Chicago-wide black unemployment rate of 18.8%, compared with 4.1% for white residents, it seems that black students, and not just immigrants/Latinos, make up a significant portion of the economically disadvantaged students (Henricks 54). Accordingly, black Chicagoans face disproportionately adverse health and educational outcomes, and black adolescents tend to live in neighborhoods without adequate healthcare resources (Henricks et al. 90, 142; Hall 55). Thus,

[4] "Low Income" is defined in the same way as "economically disadvantaged": a student's family makes up to 185% of the federal poverty guideline.

poor black students encounter some challenges similar to those of poor Latino/immigrant students.

It is unclear from existing research whether or not the Healthy CPS intervention provides benefits to all marginalized populations within schools. On the surface, these groups come across similar obstacles, but there may be something unique about the immigrant experience that compounds such structural inequities. This analysis attempts to shed light on some of these uncertainties. If any significant patterns that emerge for the high-immigrant schools are mostly due to income effects, then I would expect to see similar patterns for the low-income/low-immigrant schools. If, on the other hand, there are unique challenges to serving an immigrant population, then I would expect the results of the analysis to differ between the two subgroups.

Outcome Measures

I use several measures of academic achievement as outcomes. Primarily, I look to school performance on the Northwest Evaluation Association Measures of Academic Progress (NWEA MAP), which tests reading and math ("About the NWEA Assessments"). CPS students complete the assessment every year between second and eighth grade (Carrane). Specifically, I use reading and math attainment percentile for all grades as an indication of a school's overall performance. The attainment percentiles measure how many students at the school are reading or doing math at or above their grade level relative to other CPS schools, so they indicate the school's ability to keep its students up to standards important for their future outcomes.

I use the results of CPS's School Quality Rating Policy (SQRP) as a third outcome measure. For the SQRP, schools are rated on a 1 to 5 scale on the following indicators: student NWEA MAP attainment and growth, student attendance, results of the My Voice, My School survey (which measures things like school organization and safety), student growth on an

English proficiency exam for English Learner students, and the quality of the data that the school collects. These indicator scores are then averaged, with some weighted higher than others ("SQRP Overview"). The weighted average translates into a 3-2-2+-1-1+ scale score, with 3 being the worst performing schools and 1+ being the best performing ("Chicago Public Schools' School Quality Rating Policy"). For the sake of obtaining a more nuanced analysis, I use the weighted average a school earns as my outcome measure, not that score's corresponding 3-2-2+-1-1+ ranking.

Strengths and Limitations of the Methodology

The methodology I employ is the most appropriate one for analyzing the questions I have identified. Because I aim to describe broad patterns, I use a quantitative statistical analysis. This approach has increased external validity because it looks at numerous schools and identifies general trends, rather than focusing in on one case study (which can be helpful, but would not aid me in figuring out the general direction of the Healthy CPS program's effects for any given school). The ANOVA has the added advantage over other statistical tests like a t test of allowing for more than two categories for the nominal level variable. This means that I can perform the analysis for all three classes of schools (Certified, Pending, and Not Certified). Therefore, the ANOVA is the most appropriate research design for the specific policy that I study.

As with any analytical method, there are some limitations to my research design. It should be noted that the three classes are not balanced, meaning that there are not equal numbers of schools at each certification level. This is one statistical limitation of the data, as class imbalance generally makes the results of ANOVA less robust. However, within each level, each class still has enough data points so that averages are not hugely swayed by outliers.

Additionally, there is some concern that this imbalance is not random. I would expect there to be fewer Certified and Pending schools because of the effort required to become Certified, and this expectation holds up in the data: there are 175 Certified and Pending schools, compared to 261 Not Certified schools. Perhaps there is some confounder variable(s) that the Certified and Pending schools share, such as more organized school environments or administrators who are more open-minded, that can also affect academic outcomes. Confounders are a classic limitation of using a non-experimental research design, since no researcher can control the myriad variables that impact school performance. A randomized experiment would be impossible to implement for logistical and ethical reasons, so it is necessary to work with the available data while keeping such concerns in mind. In the future, qualitative research can supplement the data analysis to help identify some of these confounders.

I also perform a check to see which types of schools make up the Certified class by classifying all of the Certified schools as high-immigrant, low-income, and other. This way, I can see if schools that hypothetically share any confounders (because they have all attained Certified status) are all the same kind of school according to my typology. If this were the case, then I would be concerned that there would not be a sufficient number of each type of school in each class to do a meaningful analysis and that the certification status correlates strongly with school population types. However, I find that the Certified class is virtually evenly split between the three categories. Confounders may very well exist between the three classes, but at least there is diversity in the racial/ethnic makeup and socioeconomic status of students who attend Certified schools, so the confounders do not necessarily correlate with these features. If a school has the ability to implement reform, then it appears likely that the reform will be put in place, regardless of the makeup of the student body.

Results and Interpretation

Distribution of School Types Among Certified Schools

Before beginning the actual statistical analysis, I perform a preliminary check as mentioned above to see how many Certified schools fall into my three school type categories. The distribution of school types among Certified schools demonstrates whether or not Healthy CPS actually reaches the populations with the greatest need for support, and it also indicates how strong my statistical analysis will be.

There are 100 Healthy Certified CPS elementary schools.[5] Of these schools, the student populations are relatively diverse. Thirty-five schools meet the criterion of high-immigrant schools (30% or more of the student body is classified as Limited English), and 36 meet the criterion of low-income, low-immigrant schools (less than 30% of the student body is bilingual *and* 50% or more of the student body is classified as Low Income). All of the high-immigrant schools are also low-income, which confirms my thinking that the comparison group of the low-income/low-immigrant schools is necessary in order to parse out income effects and population effects. The other 29 schools do not meet the criteria for either category, as they have low rates of both bilingual and Low Income students. This means that about two-thirds of all Healthy Certified elementary schools are low-income; of these schools, about half are high-immigrant, and the other half are low-immigrant.

It should be noted that race/ethnicity plays an important role not only for the high-immigrant schools, but also for the low-income/low-immigrant schools. All of these schools are predominantly (over 90%) black. This is in line with the high level of residential and school

[5] For the ANOVA, n = 98 because, for reasons that are unclear, two of these schools do not have reading and math scores data publicly available.

segregation in Chicago, as well as in disparate wealth outcomes across race (Chang; "Racial Wealth Divide" 3, 7). Interestingly, rather than being dominated by white students, the 29 more affluent schools have very diverse student populations with a more even split between different racial and ethnic groups. While it is beyond the scope of this paper to investigate the full effects of diverse vs. non-diverse student populations, it is important to highlight that both the high-immigrant and low-income/low-immigrant schools operate in a context of extreme racial/ethnic clustering.

ANOVA Results: All Elementary Schools

For reading scores, Certified and Pending schools appear to exhibit similar results: their mean reading attainment percentiles are 41.97 and 44.64, respectively. This is significantly higher than the performance of the Not Certified schools, for which the mean reading attainment percentile is 33.51. The p-value for this analysis is 0.00598, which implies a statistically significant result at the 0.01 significance level. A similar pattern emerges for the NWEA Math Attainment Percentile. Certified and Pending schools both have relatively high mean math attainment percentiles, 47.03 and 51.45, respectively. The Not Certified schools have a mean of 37.90. The p-value for the math scores analysis is 0.0008, which is significant at the 0.001 significance level. For all elementary schools, the three classes of schools showed very similar average SQRP points: 3.46 for the Certified schools, 3.54 for the Pending Certification schools, and 3.48 for the Not Certified schools. Accordingly, the p-value (0.681) is not significant.

Figures 1-3 on the following page display graphs of the means of the three outcome measures for each class of school. The results of the ANOVA are listed in full in Appendix B.

Figure 1: Average reading attainment percentile by certification status for all elementary schools.

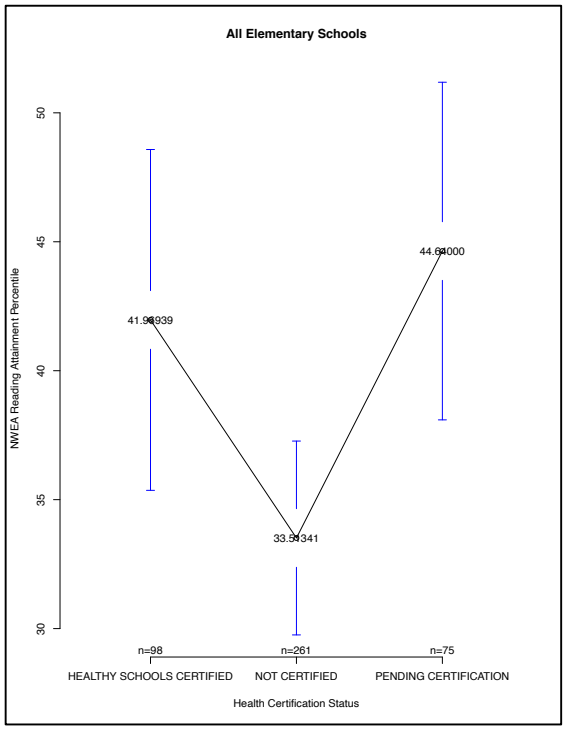


Figure 2: Average math attainment percentile by certification status for all elementary schools.

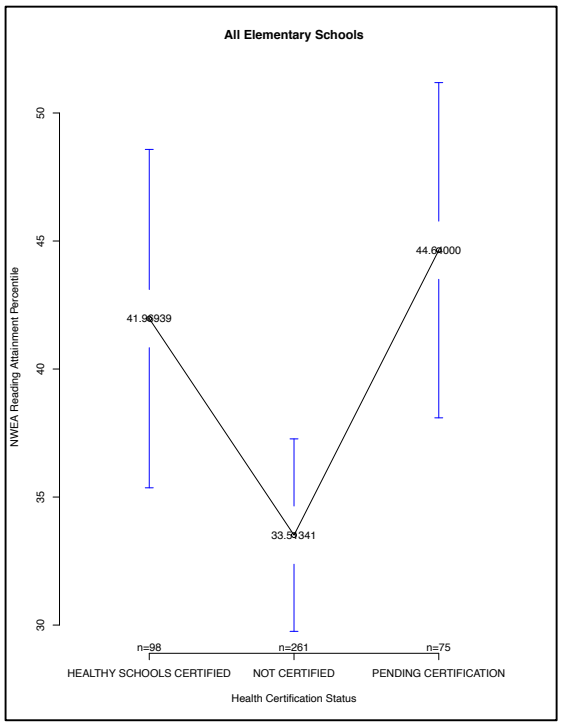
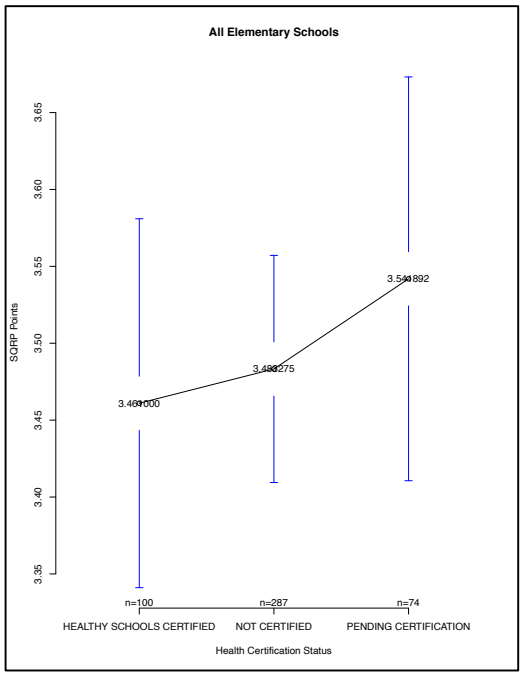


Figure 3: Average SQRP points by certification status for all elementary schools.



ANOVA Results: High-Immigrant Schools

In contrast to the large differences between groups and statistical significance of the results seen among all schools, when the analysis is repeated for just the subset of schools identified as "high-immigrant," there are no significant results. Average reading attainment percentiles are 36.65 for Certified schools, 37.00 for Pending schools, and 35.89 for Not Certified schools. Average math attainment percentiles are even closer to each other, at 47.84 for Certified schools, 47.29 for Pending schools, and 47.48 for Not Certified schools. Average SQRP points are within 0.1 points of each other: 3.45 for Certified, 3.54 for Pending, and 3.49 for Not Certified. All p-values are above 0.8.

Figures 4-6 on the following page display graphs of the means of the three outcome measures for each class of school. The results of the ANOVA are listed in full in Appendix B.

Figure 4: Average reading attainment percentile by certification status for high-immigrant schools.

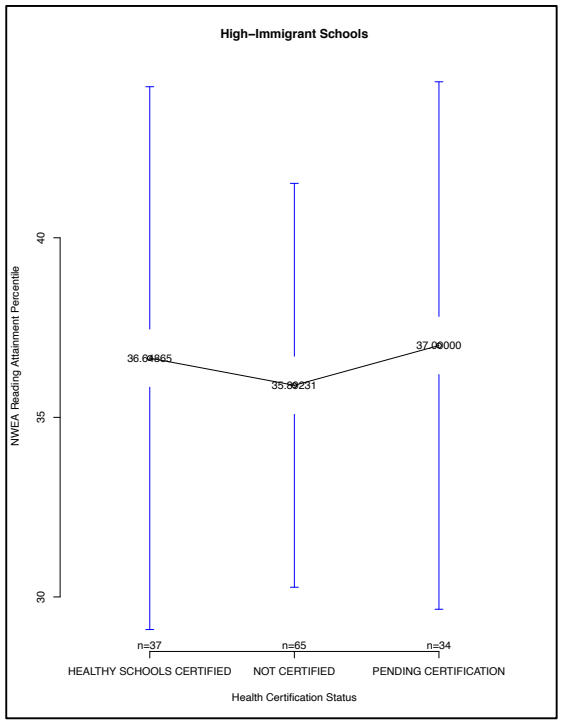


Figure 5: Average math attainment percentile by certification status for high-immigrant schools.

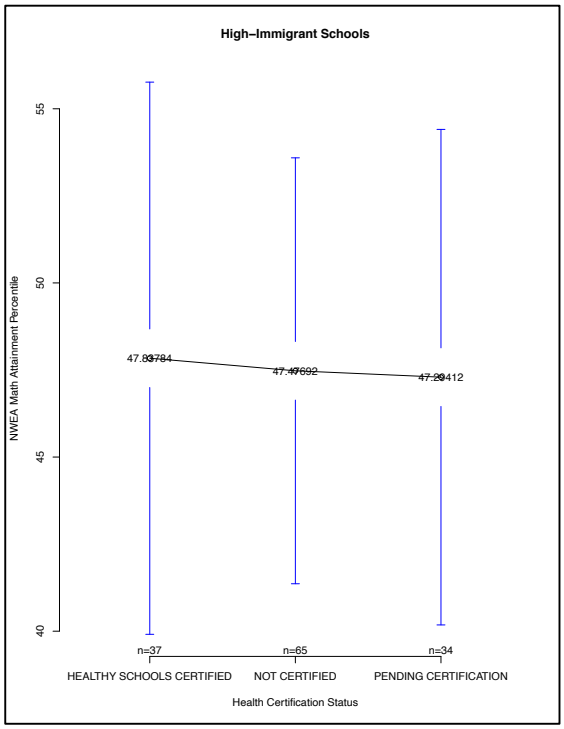
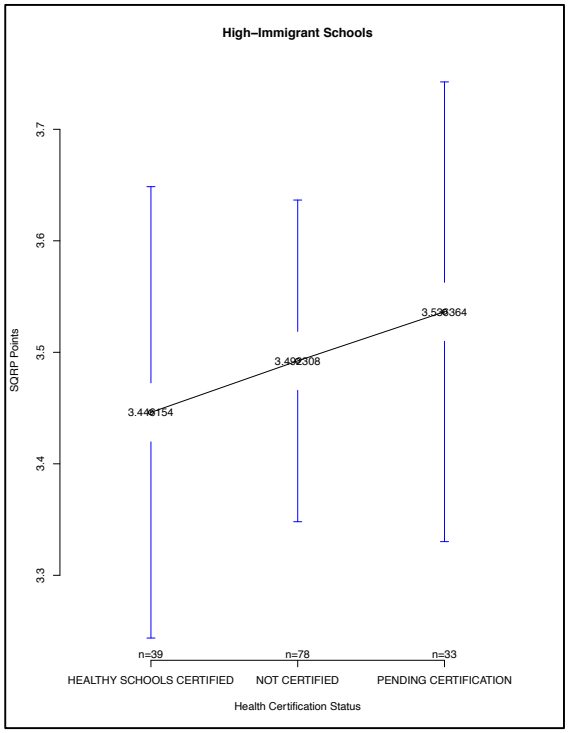


Figure 6: Average SQRP points by certification status for high-immigrant schools.



ANOVA Results: Low-Income Schools

Low-income schools see a return to significant results, although not to the degree that exists when all schools are figured into the analysis. Average reading percentiles for Certified and Pending schools are 32.78 and 37.38, respectively, while the average reading percentile for Not Certified schools is 23.58. The p-value of 0.0314 indicates a statistically significant result at the 0.05 significance level. Similarly, average math percentiles are 34.08 for Certified schools, 43.62 for Pending schools, and 26.93 for Not Certified schools. The analysis of this difference in math averages is also statistically significant at the 0.05 significance level, with a p-value of 0.0228. SQRP averages display much less variation. Certified schools have an average of 3.41, Pending schools have an average of 3.54, and Not Certified schools have an average of 3.47. Here, the p-value (0.758) is not significant.

Figures 7-9 on the following page display graphs of the means of the three outcome measures for each class of school. The results of the ANOVA are listed in full in Appendix B.

Figure 7: Average reading attainment percentile by certification status for low-income schools.

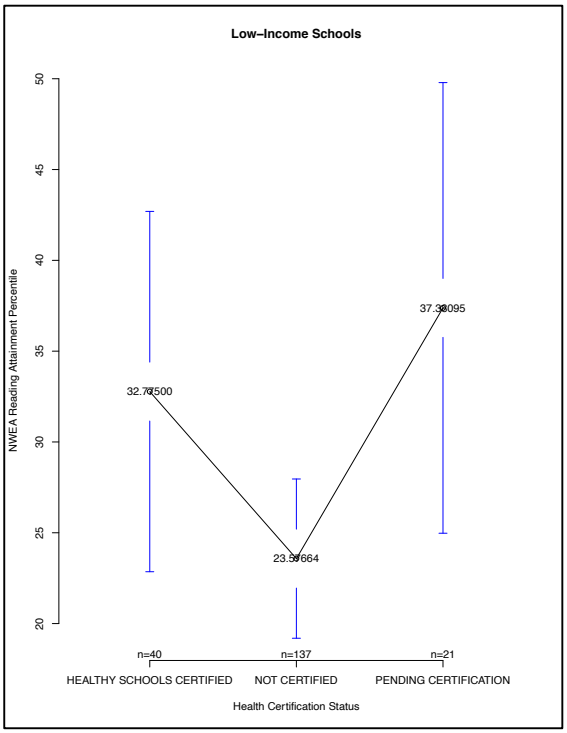


Figure 8: Average math attainment percentile by certification status for low-income schools.

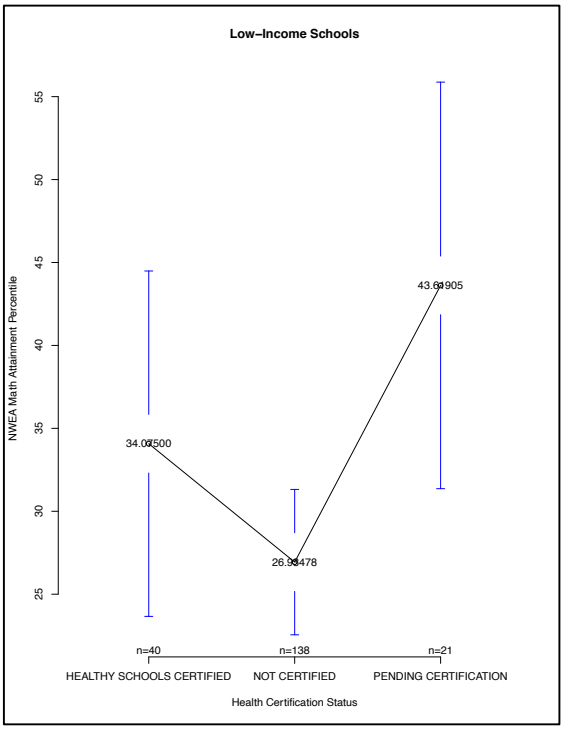
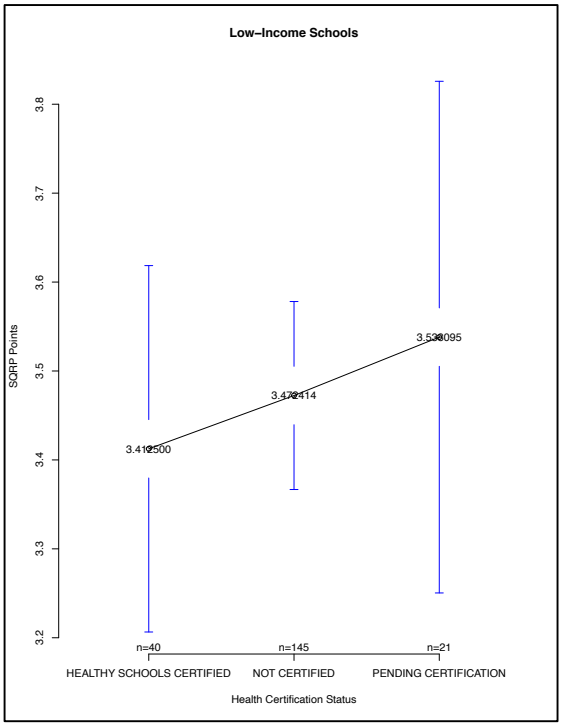


Figure 9: Average SQRP points by certification status for low-income schools.



Interpretation

First off, it should be noted that none of the analyses of SQRP points yield any significant results. In hindsight, this is to be expected, as SQRP points use a much smaller scale than the NWEA attainment percentiles. Since all three analyses—all schools, high-immigrant schools, and low-income schools—have similarly insignificant results for SQRP averages, I devote the rest of this section to a discussion of differences in the NWEA attainment percentiles, which do make for some interesting comparisons.

In the analysis of all elementary schools, significantly better performance from the Certified and Pending schools compared to the Not Certified schools holds across subject areas. Certified and Pending schools have math and reading attainment around 10 percentiles above the attainment percentiles of Not Certified schools. The fact that these differences are statistically significant indicates that they are unlikely to have occurred by chance, which lends support to the idea that Healthy CPS positively correlates with school academic performance.

Examining solely high-immigrant schools would not tell the same story. Average reading and math percentiles show little change across certification status, and this is reflected in the lack of any statistically significant results. For whatever reason, in these schools, Healthy CPS does not appear to have any sort of positive relationship with academic measures.

The analysis of the low-income schools further complicates the picture, because for this subset of schools, there are significant differences in academic outcomes between the different certification statuses. While the results are not as statistically significant as those for the all-schools analysis, which indicates that they are more likely to have occurred by chance, they are still statistically significant at the generally accepted 0.05 significance level, so I can reject the null hypothesis that Healthy CPS has no relationship with academic performance. Therefore, it

appears that Healthy CPS *likely* impacts school performance for low-income schools, but only if those schools do not have a large immigrant student population. Recall that virtually all of the high-immigrant schools have rates of student poverty comparable to those of the low-income schools; therefore, the analysis suggests that something unique about having an immigrant student body interacts with the Healthy CPS intervention to produce different results for schools that otherwise have a similar socioeconomic makeup.

Policy Recommendations

Guiding Principle: Equity

This analysis yields interesting results insofar as it pinpoints communities in which Healthy CPS appears to not affect academic performance greatly. It is important to note that the analysis does not identify any causal mechanisms. However, combining the results with background knowledge on immigrant communities and Healthy CPS materials allows me to get at potential causes and produce several policy recommendations. I also look to other school systems with similar student bodies that have implemented health reforms to see what changes to Healthy CPS could look like.

I find that CPS omits any language around equity, unlike a comparable school district, Los Angeles Unified School District (LAUSD). As noted previously, none of the CPS publications regarding Healthy CPS discuss issues of healthcare access. Instead, the initiative is couched in general terms of "commitment to a safe and healthy learning environment" without any mention of the very environmental factors many CPS students face that make their school experience less "safe and healthy" than average ("Healthy CPS"). Unfortunately, my findings indicate that ignoring these problems has resulted in a health intervention that is more effective for certain populations than others, with students from immigrant families losing out at the end

of the day. As such, my general recommendation for policy change is a shift to focusing on equity, and in particular, on challenges faced by the immigrant CPS student population. The LAUSD is one good example of a school district with an equity-centric health program that serves many immigrant students, and I draw on it for more specific policy recommendations.

LAUSD Overview

LAUSD serves a student body relatively similar to that of CPS. Located in a sprawling metropolitan area, LAUSD is the second largest school district in the country (recall that CPS is the third largest), and 73.4% of its students are Latino (*Fingertip Facts*). Moreover, as of the 2019-2020 school year, about 18.3% of students are enrolled in ESL classes, and nearly 80% qualify for free or reduced lunch (*Fingertip Facts*). While LAUSD does not have a sizeable low-income black population like CPS, the large presence of low-income Latino students from immigrant families makes for an important comparison in how Los Angeles schools address health disparities for this group of students.

LAUSD's main health initiative is called "Blueprint for Wellness" and comprises eight issue areas: nutrition services, physical education, health education, health services, safe environment, positive attendance, staff wellness, and parent and community involvement ("Home"). The first five components are similar to the Healthy CPS requirements, while the latter three are unique to LAUSD and reflect an emphasis on holistic community health. Furthermore, some of the specific provisions of the first five areas include more measures than their Healthy CPS analogs. For example, "health services" encompasses not only the dental and vision screenings that CPS provides, but also the operation of 15 multipurpose clinics in LAUSD schools ("LAUSD Clinic Services").

While repeating the ANOVA for LAUSD schools is outside of the scope of this paper, there are signs that the Blueprint has effectively reached students from immigrant families in Los Angeles: in the 2017-18 school year (three years after the Blueprint's implementation), English Learner students showed gains in reading and math scores (Jones). Thus, LAUSD serves a large number of students from immigrant families, and it has implemented health policies similar to those of CPS in order to more effectively aid that population. The differences between the two can help illuminate some ways forward for CPS.

Policy Recommendation 1: Merge School-Based Health Centers and Medicaid Designees

LAUSD operates a variety of extensive health services at its 15 school-based health clinics. The website advertising the clinics and giving parents instructions for making an appointment explicitly states that the clinics serve uninsured students and their siblings, as well as students who receive coverage through Medi-Cal, California's state Medicaid program ("LAUSD Clinic Services"). The active inclusion of these groups shows LAUSD's commitment to equity. Accordingly, LAUSD states on its website that "the delivery of health services…is an important concern, particularly when students do not have access to basic, quality health care" ("Health Services"). Overall, LAUSD displays a recognition of, and action plan based around, inequitable healthcare access.

CPS operates similar clinics that provide a variety of services at no charge to students in its School-Based Health Centers ("Student Health Services"). Many of these clinics operate in schools that predominantly serve immigrant communities, so in this sense, CPS already implements these healthcare measures in an equitable way by locating them in the neighborhoods that need them the most ("Chicago Public Schools School Based Health Centers"). However, the website advertising the clinics does not mention any equity goals, and

the emphasis is on the direct services provided, not connecting families to coverage programs. Thus, while CPS does actually provide services similar to those of LAUSD, its approach does not center equity, and it is unclear if the service provision is accompanied by any longer-term coverage considerations. Healthy CPS does take a step in this direction by calling for a Medicaid Designee on school staff in order to help connect families to healthcare coverage and food provision programs, but there is no mention of how specifically this role should incorporate into the school environment, at what scale the Medicaid Designee should work, and which families the Designee should target ("Healthy CPS Indicator Checklist").

Given this lack of clarity surrounding the role of the Medicaid Designee, I recommend that the Medicaid Designee be made a staff member of the School-Based Health Center by the CPS CEO. Furthermore, I recommend that the Designee see every patient at the school's clinic in order to determine eligibility for various coverage options and program enrollments. The students most likely to use the School-Based Health Center are the students most likely to not have health care coverage, so streamlining the two services effectively targets the highest-need populations. In order to successfully complete this job, Medicaid Designees should receive training on the specific barriers faced by undocumented immigrants, as well as healthcare coverage options that are still available to this group. This is critical given the large undocumented population in Chicago.

CPS has effective tools in place to help immigrant families. Both Medicaid Designees and School-Based Health Centers meet community needs that interrupt a child's schooling. Because my recommendation is merely reorganizing two already-existing programs, it does not incur the huge economic and organizational costs of starting new initiatives. With more streamlining of these two programs, CPS will be able to efficiently reach more children with

their salutary benefits. Since immigrant families have particular trouble accessing health care, it is essential to integrate coverage and direct care for the students who already receive the latter service.

Policy Recommendation 2: Amend Food Control Standards

Some provisions of Healthy CPS may come up against cultural barriers that make the policy especially difficult for high-immigrant schools to implement successfully. In particular, rules limiting the use of food as a reward or a fundraiser may clash with cultural practices around food. Food often functions as an important way for immigrant families to retain their culture (Holtzman 367). Moreover, it is widely documented that both Asian and Latino immigrant parents tend to overfeed their children because of the perceived connection between this practice and good health, affluence, and affection (Cheah and Van Hook 748-751, Guo et al. 7, Kaufman and Karpati 2184-2186, Loth et al. 142). Deborah McGarvey, who works in Chicago schools as a representative of the health intervention group America SCORES, agrees, observing that at her organization's end-of-year celebration, Latino families tended to bring more food "than they could possibly ever eat," while the organization had to buy food for the black families it served because they showed up with so little (McGarvey personal correspondence). Additionally, economic hardship, dependence on monthly government benefits, and living situations created out of scarcity compound such issues for low-income immigrant families (Kaufman and Karpati 2181-2184). Thus, it is clear that food control measures are particularly fraught for many immigrant communities.

LAUSD implements some food control measures, but its regulations are notably less stringent than those of Healthy CPS. Los Angeles schools allow parent-supplied food for student birthday, holiday, and cultural celebrations (*Blueprint for Wellness* 17). This activity would be

banned at a Healthy Certified school, which does not allow any food in celebrations during the school day ("Healthy CPS Indicator Checklist"). LAUSD's middle-of-the-road approach seems more appropriate when working with immigrant families, particularly Latino immigrant families, and may even induce small changes that could eventually make the more sweeping CPS changes possible in the future. Focus group research has shown, for example, that once Latino parents are exposed to healthier versions of traditional dishes, they prefer to feed these to their family over the original recipes (Flores et al. 85, 87-88).

For these reasons, I recommend that the Office of Student Health and Wellness, the division of CPS that oversees Healthy CPS, loosen its food control standards in its Healthy CPS checklist. Specifically, because of the importance of food for immigrant families and LAUSD's policy, I recommend that it allow parents to supply food for celebrations during the school day. Such a measure recognizes the need for equity because it is culturally competent and responsive to the specific needs of immigrant families. It does not patronize immigrant families by assuming that school officials know what is best for their children to eat and recognizes the particular salience of food for immigrant communities.

Conclusion

In the context of Chicago Public Schools, a huge public school system composed largely of low-income children of color, Healthy CPS is a well-meaning effort to address health inequities that can impact educational performance. However, as this policy develops, it will be critical to make sure that it truly serves the populations that need it the most. As my analysis indicates, this is not always the case. While all elementary schools as a whole do see better academic outcomes if they are Healthy Certified or Pending Certification, there is no apparent difference among high-immigrant schools. Notably, differential outcomes do occur among low-

income/low-immigrant schools, which suggests the existence of implementation challenges specific to immigrant populations. In order to address such challenges, I recommend that CPS model its health intervention off of Los Angeles's and center equity by merging the School-Based Health Centers and Medicaid Designees, as well as introducing greater flexibility in Healthy CPS food control standards. I would anticipate such changes to make Healthy CPS implementation more culturally competent, responsive to community needs, and holistic.

One general takeaway for policymakers that this analysis has shown is that policy issue areas are not siloes untouched by other issue areas. This analysis incorporates health, immigration, and education policy to study a specific initiative that has ramifications for all three topics. Background knowledge of each one is essential to understanding how Healthy CPS could potentially help students and where specifically to look for such improvements. For example, my decision to analyze both high-immigrant schools and low-income/low-immigrant schools stems from the knowledge that poverty has a large influence on school performance, so any outcome measures related to this area must take student poverty into account. Since all high-immigrant schools are also low-income, I needed a group of low-income schools to compare my test group with in order to isolate the effects of having a largely immigrant student body. This decision ultimately yields interesting results because the two subgroups display different patterns, which in turn greatly aids my understanding of Healthy CPS's implementation successes and challenges.

Future areas of research can investigate causal mechanisms that explain the patterns I have observed. Qualitative studies of schools belonging to the high-immigrant and low-income categories can pinpoint differences in Healthy CPS implementation and consequences in these two types of schools. This insight is critical because it will help researchers gain a more thorough

understanding of Healthy CPS, which will aid the development of policy recommendations tailored to specific causes of the results I have observed. Another subject to examine is high schools; perhaps some age effects make the effectiveness of health policy different for children of different ages. Differences between Certified and Pending schools also merit attention. While I essentially grouped the two together because I wanted to compare schools with some involvement in Healthy CPS to schools that had none of the certification standards, one interesting finding I notice is that Pending schools actually tend to perform at a higher level than the Certified schools. This is not the result I would expect from following the simple logic of greater health leading to better academic results, so studying the group differences between the Pending and the Certified schools can help illuminate a more nuanced understanding of this relationship.

As mentioned previously, the real key will be to continue with this type of analysis as Healthy CPS becomes more widely implemented. When I began investigating this topic, I was struck by the lack of research that CPS has conducted on its own policy, especially given the breadth of other information that the district collects about its schools. Every year that goes by is another year that Certified schools can potentially reap the benefits of their status. These changes must be studied in the long term, on a large scale, and for every type of student in order to truly ensure that “every child, regardless of race, ethnicity, or national origin is treated with dignity and respect from the moment they enter our schools.”

Bibliography

Acosta-Córdova, José Miguel. "The Latino Neighborhoods Report: Issues and Prospects for Chicago." *Institute for Research on Race and Public Policy,* University of Illinois at Chicago, 11 Oct. 2017.

"ACS Demographic and Housing Estimates: Chicago, IL." United States Census Bureau*,* 2018.

Belsha, Kalyn. "English Learners Often Go Without Required Help at Chicago Schools." *Chicago Reporter,* 28 June 2017.

Bernstein, Hamutal, et al. "With Public Charge Rule Looming, One in Seven Adults in Immigrant Families Reported Avoiding Public Benefit Programs in 2018." *Urban Institute*, 22 May 2019.

Blueprint for Wellness: Healthy Choices for Lifelong Health. Los Angeles Unified School District, 2017.

Busch, Vincent, et al. "Changing Multiple Adolescent Health Behaviors Through School-Based Interventions: A Review of the Literature." *Journal of School Health*, vol. 83, no. 7, 2013, pp. 514-523.

Carrane, Lauren. "What to Know About the NWEA MAP Test for Non-CPS Students." *Educational Endeavors*, 24 June 2019.

Cha, Biblia S., et al. "Beyond Access: Psychosocial Barriers to Undocumented Students' Use of Mental Health Services." *Social Science and Medicine*, vol. 233, 2019, pp. 193-200.

Chang, Alvin. "We Can Draw School Zones to Make Classrooms Less Segregated. This Is How Well Your District Does." *Vox*, 27 Aug. 2018.

Chea, Charissa S.L., and Van Hook, Jennifer. "Chinese and Korean Immigrants' Early Life Deprivation: An Important Factor for Child Feeding Practices and Children's Body

Weight in the United States." *Social Science & Medicine*, vol. 74, no. 5, 2012, pp. 744-752.

"Chicago Public Schools School Based Health Centers 2013-2014." Chicago Public Schools, 2013.

"Chicago Public Schools' School Quality Rating Policy: Understanding How the District Measures School Performance in Chicago." Kids First Chicago, n.d.

"Child Nutrition Programs: Income Eligibility Guidelines (July 1, 2019 - June 30, 2020)." *Food and Nutrition Service,* U.S. Department of Agriculture, 20 March 2019.

"Community Data Snapshot: New City." *Chicago Metropolitan Agency for Planning*, 2019.

"Conducting Health & Wellness Research at Chicago Public Schools." Workshop presentation, Chicago Public Schools, n.d. Accessed through "Education," Northwestern Medicine Center for Community Health. <http://arccresources.net/wp-content/uploads/2013/12/Conducting-Research-with-Chicago-Public-Schools.pdf>

"CPS Stats and Facts." Chicago Public Schools, 2019.

Demographics_LEPSPED_2020. Online access: "School Data." Chicago Public Schools, 2019.

Demographics_RacialEthnic_2020. Online access: "School Data." Chicago Public Schools, 2019.

Dukmasova, Maya. "Sexual Miseducation." *Chicago Reader,* 24 July 2019.

Durden, Elizabeth T. "Usual Source of Health Care Among Hispanic Children: The Implications of Immigration." *Medical Care,* vol. 45, no. 8, 2007, pp. 753-760.

"English Learner Programs." Chicago Public Schools, 2015.

Fedewa, Alicia. "The Effects of Physical Activity and Physical Fitness on Children's

Achievement and Cognitive Outcomes: A Meta-Analysis." *Research Quarterly for Exercise and Sport*, vol. 82, no. 3, 2011, pp. 521-535.

Fingertip Facts. Los Angeles Unified School District Board of Education, 2019.

Flores, Glenn, et al. "Making Tortillas without Lard: Latino Parents' Perspectives on Healthy Eating, Physical Activity, and Weight-Management Strategies for Overweight Latino Children." *Journal of the Academy of Nutrition and Dietetics*, vol. 112, no. 1, 2012, pp. 81-89.

Gelatt, Julia. "Immigration Status and the Healthcare Access and Health of Children of Immigrants." *Social Science Quarterly*, vol. 97, no. 3, 2016, pp. 540-554.

Glass, Ira, host. "Vague and Confused." *This American Life,* NPR, 3 March 2017.

Guo, Xiaofan, et al. "Differences in Lifestyle Behaviors, Dietary Habits, and Familial Factors Among Normal-Weight, Overweight, and Obese Chinese Children and Adolescents." *International Journal of Behavioral Nutrition and Physical Activity*, vol. 9, no. 120, 2012, n.p.

Haas, Steven A., and Fosse, Nathan Edward. "Health and the Educational Attainment of Adolescents: Evidence from the NLSY97." *Journal of Health and Social Behavior,* vol. 49, no. 2, 2008, pp. 178-192.

Hainmueller, Jens, et al. "Protecting Unauthorized Immigrant Mothers Improves Their Children's Mental Health." *Science,* vol. 357, no. 6355, 2017, pp. 1041-1044.

Hall, Horace R. "What Do Black Adolescents Need from Schools?" *Educational Leadership*, 2019.

Hall, Matthew, and Lubotsky, Darren. "The Demography of the Immigrant Population in Illinois." *Institute of Government and Public Affairs,* vol. 23, no. 3, 2011.

"Health Coverage of Immigrants." Henry J. Kaiser Family Foundation, 2019.

"Health Services: Health and Wellness Policy." Los Angeles Unified School District, 2017.

"Healthy Chicago 2.0." Chicago.gov, Chicago Department of Public Health, n. d.

"Healthy CPS Indicator Checklist." *Chicago Public Schools,* Office of Student Health and Wellness, 2019.

"Healthy CPS on School Progress Report Card." Chicago Public Schools, 2019.

Heath, Gregory W., et al. "Evidence-based Intervention in Physical Activity: Lessons from Around the World." *Lancet,* vol. 380, 2012, pp. 272-281.

Henricks, Kasey, et al. "A Tale of Three Cities: The State of Racial Justice in Chicago Report." *Institute for Research on Race and Public Policy,* University of Illinois at Chicago, 19 May 2017.

Holtzman, Jon D. "Food and Memory." *Annual Review of Anthropology*, vol. 35, 2006, pp. 361-378.

"Home: Health and Wellness Policy." Los Angeles Unified School District, 2017.

Jones, Barbara. "L.A. Unified Students' English and Math Proficiency Rates Improve (10-2-18)." Los Angeles Unified School District, 2 Oct. 2018.

Kaufman, Leslie, and Karpati, Adam. "Understanding the Sociocultural Roots of Childhood Obesity: Food Practices Among Latino Families of Bushwick, Brooklyn." *Social Science & Medicine*, vol. 64, no. 11, 2007, pp. 2177-2188.

Langley, Audra K., et al. "Evidence-Based Mental Health Programs in Schools: Barriers and Facilitators of Successful Implementation." *School Mental Health*, vol. 2, 2010, pp. 105-113.

"LAUSD Clinic Services." Los Angeles Unified School District, 2019.

Levine, Phillip B., and Schanzenbach, Diane Whitmore. "The Impact of Children's Public Health Insurance Expansions on Educational Outcomes." *National Bureau of Economic Research Working Paper Series*, no. 14671, 2009.

Loth, Katie A., et al. "Eat This, Not That! Parental Demographic Correlates of Food-Related Parenting Practices." *Appetite*, vol. 60, no. 1, 2013, pp. 140-147.

"Map of Household Types by Neighborhood in Chicago." Statistical Atlas, 2018.

McGarvey, Deborah. Personal correspondence, 4 Feb. 2020.

Muckelbauer, Rebecca, et al. "Promotion and Provision of Drinking Water in Schools for Overweight Prevention: Randomized, Controlled Cluster Trial." *Pediatrics,* vol. 123, no. 4, 2009, pp. 661-667.

Narea, Nicole. "Courts blocked Trump's rule to keep out low-income immigrants." *Vox*, 11 Oct. 2019.

Neumark-Sztainer, Dianne, et al. "Correlates of Inadequate Fruit and Vegetable Consumption Among Adolescents." *Preventive Medicine,* vol. 25, no. 82, 1996, pp. 497-505.

O'Dea, Jennifer A. "School-based Health Education Strategies for the Improvement of Body Image and Prevention of Eating Problems." *Health Education*, vol. 105, no. 1, 2006, pp. 11-33.

Overweight and Obesity among Chicago Public Schools Students, 2010-11. Chicago Department of Public Health, 2013.

Pando, Diana. "TRP Spotlight: On the Move with Mayra López, Back of The Yards Resident and Community Organizer." *The Resurrection Project,* 2013.

Peña, Mauricio, and Cherone, Heather. "ICE Agents 'Manipulated' Chicago Cops By Calling 911 During Raids, Ald. Says: 'This Was A Bait Call To Get CPD Out There.'" *Block Club Chicago,* 26 Sept. 2019.

Polsky, Claudia, et al. "The Health in All Policies (HiAP) Approach and the Law: Preliminary Lessons from California and Chicago." *Journal of Law, Medicine & Ethics*, vol. 43, no. 1, 2015, pp. 52-55.

"Racial Wealth Divide in Chicago." *Racial Wealth Divide Initiative*, Corporation for Enterprise Development, 2017.

Rivkina, Victoria, et al. "Identifying Barriers to Chronic Disease Reporting in Chicago Public Schools: A Mixed-Methods Approach." *BioMed Central Public Health,* vol. 14, no. 1250, 2014, n.p.

Romon, Monique, et al. "Downward Trends in The Prevalence of Childhood Overweight in The Setting Of 12-Year School- And Community-Based Programmes." *Public Health Nutrition,* vol. 12, no. 10, 2008, pp. 1735-1742.

"School Quality Rating Policy (SQRP) Overview." Chicago Public Schools, 2018.

Sharma, Bimala, et al. "Effects of School-based Health Promotion Intervention on Health Behaviors among School Adolescents in North Lima and Callao, Peru." *Journal of Lifestyle Medicine,* vol. 8, no. 2, 2018, pp. 60-71.

"SSPS Tutorials: One-Way ANOVA." *Library Guides,* Kent States University, 25 Nov. 2019.

"Student Health Services." Chicago Public Schools, 2019.

"Table 104.40. Percentage of Persons Aged 18 to 24 Years Old and Age 25 and Over, by Educational Attainment, Race/Ethnicity, and Selected Racial/Ethnic Subgroups: 2010 and 2016." *Digest of Education Statistics*, National Center for Education Statistics, 2016.

"Table 215.30. Enrollment, Poverty, and Federal Funds for the 120 Largest School Districts, by Enrollment Size in 2016: 2015-16 and Fiscal Year 2018." *Digest of Education Statistics*, National Center for Education Statistics, 2019.

Taras, Howard, and Potts-Datema, William. "Chronic Health Conditions and Student Performance at School." *Journal of School Health,* vol. 75, no. 7, 2005, pp. 255-266.

Timmermans, Stefan, et al. "Spillover Effects of an Uninsured Population." *Journal of Health and Social Behavior*, vol. 55, no. 3, 2014, pp. 360- 374.

Vinicky, Amanda. "What Illinois Offers Undocumented Immigrants." *WTTW,* 16 July 2019.

Walker, Suzanne E., et al. "Population Characteristics and Health Service Use by Latino Immigrants to Southwest Missouri." *Great Plains Research*, vol. 17, no. 1, 2007, pp. 87-100.

Appendices

Appendix A: Healthy CPS Checklist

GENERAL	YES?	NO?	ACTION STEPS
The Student Medical Information form is distributed to all students and parents at the beginning of each school year.			
At least one school staff member is certified in Automated External Defibrillator and Cardiopulmonary Resuscitation (AED/CPR).			
The school's Emergency Management Plan has been expanded to include medical emergencies via the OSHW Medical Emergency Preparedness Plan.			

CHRONIC DISEASES	YES?	NO?	ACTION STEPS
All school staff completed the SY20 Chronic Conditions Training for all School Staff webinar this school year (course code 46590) by February 7.			
Students with asthma, diabetes, or food allergies are allowed to carry and self-administer any necessary medication.			

DIABETES	YES?	NO?	ACTION STEPS
The school has a non-nurse staff member trained annually as a diabetes Delegated Care Aide (DCA) to assist students with daily diabetes management.			

ALLERGIES	YES?	NO?	ACTION STEPS
All school personnel know the **unlocked** location of the district-issued EpiPens® at the school.			

Appendix A Cont.: Healthy CPS Checklist

INSTRUCTION

SEXUAL HEALTH EDUCATION	YES?	NO?	ACTION STEPS
A minimum of two school staff members have completed the CPS Sexual Health Education Instructor Training within the last four years.			
Only school or partner organization staff (CBO Locator) who have completed the CPS Sexual Health Education Instructor Training are teaching sexual health education in the school—no untrained staff are teaching sexual health education.			
All of the required sexual health education minutes are taught in all grade levels at the school (300 min in K–4th, 675 min in 5th–12th).			
The school sends three notifications of sexual health education to parents/guardians every year. At least one notification is written on school letterhead, includes only opt-out language, and includes the specific lessons covered by grade.			

PHYSICAL EDUCATION	YES?	NO?	ACTION STEPS
All high school students 9-12 are scheduled into daily PE to all grade levels.			
All elementary or middle school students receive 150 minutes per week of physical education in alignment with the CPS PE Policy.			
All students in grades 3-12 must participate in fitness education. Fitness testing results for all students in grades 3–12 at the school are submitted into Aspen by the end of the year.			

NUTRITION EDUCATION	YES?	NO?	ACTION STEPS
All elementary school students K-8 receive nutrition education as a systematic unit of instruction.			
All high school students 9-12 receive nutrition education integrated in two courses required for graduation			

Appendix A Cont.: Healthy CPS Checklist

SCHOOL LEADERSHIP	YES?	NO?	ACTION STEPS
The principal has nominated a school Wellness Champion.			
The Wellness Team is active, meets quarterly, and reports progress to the Local School Council.			
Parents, students and/or partners are involved with the school's Wellness Team			

PHYSICAL ACTIVITY	YES?	NO?	ACTION STEPS
The school provides opportunities for daily physical activity during the school day to **all students** in addition to recess and physical education.			
Teachers do not withhold physical activity as punishment (recess and PE).			

RECESS	YES?	NO?	ACTION STEPS
All K-8 students are provided with at least 20 minutes of daily recess (PE does not count as recess).			

FUNDRAISERS	YES?	NO?	ACTION STEPS
The school does not fundraise with food during the school day (defined as 12 a.m. until 30 min after the final bell).			
Food is not served or sold in competition with school meals (includes fundraisers, school stores, and celebrations).			

Appendix A Cont.: Healthy CPS Checklist

LEARNWELL

REWARDS AND CELEBRATIONS	YES?	NO?	ACTION STEPS
The school focuses on celebrating with fun rather than food during the school day (12 a.m. to 30 min after the final bell).			
Teachers do not use food as a reward.			

SAFE AND SUPPORTIVE ENVIRONMENTS	YES?	NO?	ACTION STEPS
The school has staff who have attended an OSHW Safe and Supportive Environment Professional Development.			
The school staff complete the Supporting Transgender, Nonbinary and Gender Nonconforming Students webinar on the Learning Hub (course code: Trans1920) by Nov. 20, 2019.			

SCHOOL GARDENS (where applicable)	YES?	NO?	ACTION STEPS
The school garden is supported by a school garden team.			
The school garden is utilized by at least 50% of the student body for instruction at the school at least twice a month during the growing season.			
If your school is growing edible food, then you must be Eat What you Grow Certified.			

EARLY CHILDHOOD WELLNESS	YES?	NO?	ACTION STEPS
A representative of early childhood (Prekindergarten 0-5) is on my wellness team (where applicable) and promotes health and wellness throughout the Pre-K program.			
My school's Pre-K program follows the guidelines outlined in the StartWELL initiative.			

Appendix A Cont.: Healthy CPS Checklist

HEALTH SERVICES

VISION/DENTAL/MEDICAL COMPLIANCE	YES?	NO?	ACTION STEPS
My school participates in CPS Dental Exam program			
My School participates in the CPS Vision Exam program			
80% of students in required grades (PK, K, 2, 8, IEP) received a vision screening			
80% of students in required grades receive a hearing screening (PK, K, 1,2,3, IEP)			
My school achieves 90% medical compliance by October 15			

MEDICAID DESIGNEE	YES?	NO?	ACTION STEPS
My school's Medicaid Designee assists families with aquiring health insurance and accessing healthy food through the state (SNAP/LINK) program by collaborating with their assigned Benefit Coordinator			

Accessed from https://cps.edu/SiteCollectionDocuments/HealthyCPSChecklist.pdf

Appendix B: ANOVA Results

All Schools, Reading Scores

```
                               Df Sum Sq Mean Sq F value  Pr(>F)
Healthy.Schools.Certification   2   9919    4959   5.181 0.00598 **
Residuals                     431 412537     957
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
35 observations deleted due to missingness
```

All Schools, Math Scores

```
                               Df Sum Sq Mean Sq F value Pr(>F)
Healthy.Schools.Certification   2  13539    6769    7.25  8e-04 ***
Residuals                     432 403382     934
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
34 observations deleted due to missingness
```

All Schools, SQRP Points

```
                               Df Sum Sq Mean Sq F value Pr(>F)
Healthy.Schools.Certification   2   0.29  0.1471   0.385  0.681
Residuals                     458 175.20  0.3825
8 observations deleted due to missingness
```

High-Immigrant Schools, Reading Scores

```
                               Df Sum Sq Mean Sq F value Pr(>F)
Healthy.Schools.Certification   2     31    15.6   0.031  0.969
Residuals                     133  66067   496.7
18 observations deleted due to missingness
```

High-Immigrant Schools, Math Scores

```
                               Df Sum Sq Mean Sq F value Pr(>F)
Healthy.Schools.Certification   2      6     2.8   0.005  0.995
Residuals                     133  73040   549.2
18 observations deleted due to missingness
```

High-Immigrant Schools, SQRP Points

```
                              Df Sum Sq Mean Sq F value Pr(>F)
Healthy.Schools.Certification  2   0.15  0.0732   0.188  0.829
Residuals                    147  57.15  0.3888
4 observations deleted due to missingness
```

Low-Income Schools, Reading Scores

```
                              Df Sum Sq Mean Sq F value Pr(>F)
Healthy.Schools.Certification  2   5201  2600.3   3.522 0.0314 *
Residuals                    195 143967   738.3
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
12 observations deleted due to missingness
```

Low-Income Schools, Math Scores

```
                              Df Sum Sq Mean Sq F value Pr(>F)
Healthy.Schools.Certification  2   5852  2926.2   3.857 0.0228 *
Residuals                    196 148706   758.7
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
11 observations deleted due to missingness
```

Low-Income Schools, SQRP Points

```
                              Df Sum Sq Mean Sq F value Pr(>F)
Healthy.Schools.Certification  2   0.23  0.1146   0.277  0.758
Residuals                    203  83.88  0.4132
4 observations deleted due to missingness
```