Think

Move

Quality Health Education Is Linked to Healthier Students

2021-2023 Health Education Research Results from New York City Public Schools

Achieve

Introduction

Health Education is an academic subject that provides students with the knowledge and skills to make physical, emotional, and mental health choices that support their safety, well-being, and academic success. Starting in kindergarten, comprehensive Health Education builds a foundation for lifelong learning and purposeful participation in schools, families, and communities.

A significant body of research shows[1] that a student's health directly affects academic performance and educational opportunity. Yet over the past several years we've seen increasing evidence of serious challenges to the physical and mental health of young people across the country and in New York City—including what New York City's Commissioner of Health, Dr. Ashwin Vasan, referred to as a "second pandemic of mental health needs in the wake of COVID-19."[2] In 2021, for example, nearly 2 out of 5 high school students in New York City (38%) reported feeling sad or hopeless almost every day for more than 2 weeks in a row.[3] Cisgender and transgender girls and gender non-conforming youth face persistent gender inequities, fueling health risks that disproportionately affect these groups, including sexual and reproductive health challenges and sexual violence. In New York City in 2019, girls reported experiencing sexual violence, electronic bullying and bullying on school property, feelings of sadness and hopelessness, and suicidal thoughts and attempts, at higher rates than boys in our high schools.[4]

Health Education addresses these and many other issues that are present and relevant for our students now, such as the opioid epidemic, vaping, consent, healthy relationships, digital well-being, and much more. In health classes, students learn and practice life skills, such as communication, setting and respecting boundaries, negotiation, stress management, advocacy, and decision-making. All young people need this skills-based instruction in order to be safe, healthy, and academically successful, whatever particular challenges they may encounter now or in the future. To explore which Health Education practices are associated with significant impacts on student health risk behaviors, New York City Public Schools (formerly New York City Department of Education) conducted a mixed-methods evaluation from 2021 to 2023 using statistics and qualitative data from middle and high school students, teachers, and administrators.

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[1] New York City Public Schools. Health Ed Works Year 1 Report 2019-2020. 2021. **https://infohub.nyced.org/reports/academics/health-ed-works/health-ed-works-year-1-report#1**

[2] New York City Mayor's Office. Mayor Adams unveils ambitious mental health agenda focused on improving family and child mental health, addressing overdose crisis, and expanding serious mental illness support. News release, March 2, 2023. **https://www.nyc.gov/office-of-the-mayor/news/140-23/mayor-adams-ambitious-mental-health-agenda-focused-improving-family-child-mental#/0**

[3] New York City Youth Risk Behavior Survey. 2021.

[4] New York City Youth Risk Behavior Survey. 2019.

Background

The New York State Education Department (NYSED) requires that schools provide Health Education at all grade levels. Under state law, all students in grades K-12 must have lessons on mental health, as well as lessons on HIV prevention, every year. In New York City, all students in grades 6-12 must have sexual health education as part of their Health Education course.[5] New York City public schools, however, have historically struggled to offer Health Education with the frequency, quality, and consistency that students need and deserve.

In May 2018, incorporating the recommendations of the Mayoral Sexual Health Education Task Force, New York City Public Schools announced the launch of Health Ed Works, an initiative overseen by the Office of School Wellness Programs to jump-start quality comprehensive Health Education in New York City. The initiative focused particularly on middle schools, only 25% of which provided all of their students with required health instruction in 2018.

To help identify and advocate for model practices that could potentially be expanded to more schools citywide, the Office of School Wellness Programs secured a grant in 2020 to study the impact of its Health Education practices on student outcomes.

> "Health class is really important because it touches on things that happen in real life when you grow up. It teaches you how to handle situations when you're an adult. I just think it's really important."
>
> *—Middle school student*

Key Takeaways

Information from quantitative analyses, student focus groups, and interviews with teachers and administrators indicate that schools that focus on these four aspects of Health Education tend to have healthier students:

Training Health Teachers

New York City Public Schools offers training for health teachers throughout the city. Schools where at least one teacher went to a recent Health Education training tend to have healthier students.

Health Teacher Consistency

In some schools, the health teachers change from year to year. In schools where the same people teach health class for at least 2 years in a row, students generally report healthier behaviors.

Teaching Health Skills

A quality curriculum covers a range of health skills, like communication, decision-making, managing stress, and finding reliable health resources. The more skills taught in health class, the healthier students tend to be.

School Wellness Council Funding

A School Wellness Council is a group of parents, students, staff, and community members who work with the school administration to support health policies in schools. Students in schools that requested and received funding for their School Wellness Council generally reported healthier behaviors.

[5] New York City Public Schools. Health Education Requirements. 2023. **https://www.schools.nyc.gov/learning/subjects/health-education/health-education-requirements**

Recommendations

The following recommendations were developed based on the findings from this study:

- **School administrators should encourage health teachers to attend professional learning opportunities (PLOs).** The number of teachers who attended a health PLO was associated with better middle school student mental health outcomes. Attending PLOs may positively affect student outcomes through improved teacher quality.
- **School administrators should assign dedicated teachers to teach health over multiple years.** The number of teachers who taught Health Education for at least 2 consecutive years was associated with better middle school student outcomes. Consistently assigning Health Education teachers may have a positive effect on student outcomes by strengthening instructional experience, teacher confidence, and student relationships.
- **The Health Education curriculum should provide opportunities for students to practice and apply life skills.** The number of skills addressed in Health Education was associated with better high school student mental health outcomes, suggesting that skills-based Health Education helps students outside of the classroom.
- **Continue to explore the specific School Wellness Council characteristics and practices that affect student outcomes.** Receiving School Wellness Council funding was associated with positive health outcomes for middle and high school students. Future research could explore the factors that contribute to this association. What makes a successful School Wellness Council? Are the schools that have funding also schools that are more “ready” to implement the strategies that affect student health? Does the amount of funding matter? Is the presence of funding itself an incentive?
- **At all levels of the school system, Health Education training, curricula, and other resources should be developed with the needs of all students in mind,** with particular attention to female students, LGBTQ+ students, and students of color. Health Education practices affect student health outcomes differently across sex, race/ethnicity, and sexual orientation/gender identity; not all groups of students benefit equally from the same practices.

Results: Training Health Teachers

As part of instructional and programmatic support for Health Education, New York City Public Schools offers professional development for health teachers in the form of webinars, conferences, and training opportunities throughout the school year. This research showed that the number of teachers who attended a Health Education professional learning opportunity (PLO) was associated with changes in middle school student mental health outcomes.

For every additional teacher who attended a PLO in the past year:

> 11% fewer middle school students reported **bullying on school property**[6]
>
> 8% fewer middle school students reported **non-suicidal self-injury**[7]

Educator and Student Interviews

Participation in professional learning was one of the topics discussed during teacher interviews. Interviewees reported fairly low attendance at professional learning opportunities (PLOs), and shared barriers and facilitators to participation. These included time constraints and support (or lack thereof) from principals, who ensure classroom coverage. Some interviewees mentioned not knowing when PLOs were being offered or what topics are available to them.

> "... when you go to these [Health Education] workshops and everything, besides the material and the information, the networking that you do to see what's going on in other places, to me that's more important than anything."
>
> *—High school administrator*

> "Well, my principal is really good about professional development [PD], so she'll always let us go. I personally like the virtual PDs, that's great for me. The only thing that was hard was scheduling them because they were always so full. Also, I don't know how many types were offered, like how many times can you go see the exact same thing."
>
> *—Middle school teacher*

[6] 11% fewer middle school students compared with students in schools where zero teachers attended a PLO, $p < 0.05$

[7] 8% fewer middle school students compared with students in schools where zero teachers attended a PLO, $p < 0.10$

Results: Health Teacher Consistency

In many New York City public schools, the instructor assigned to teach Health Education changes from year to year. Of the schools included in this study, most had at least one instructor who consistently taught health from year to year. The number of teachers who taught Health Education for at least 2 consecutive years was associated with better middle school student sexual health outcomes.

For every additional instructor who taught health in consecutive years:

> 3% more middle school students reported **recent condom use** (among middle school students who reported being sexually active)[8]

Educator and Student Interviews

During interviews, instructors identified benefits of teacher consistency for students and for themselves as teachers. Educators who had taught a class in the past said the primary benefit was the reduced time required to plan lessons. Instructors (especially those without a Health Education certification) also mentioned gaining comfort and competence in teaching health topics.

Students reported the primary benefit as consistency in their relationships with health teachers, especially given the unique relationship that health teachers have with their students.

> "Oh, of course [there are benefits to students]. Especially if they're thinking they're your besties, so there's that relationship that grows, and you also get to see them evolve which is beautiful."
>
> *—Middle school teacher*

> "You get better, get more comfortable with the topics. It's just, you have relationships. You already know the deal. I can basically do it with my eyes closed. I've been doing it so long, I know exactly what's next."
>
> *—High school teacher*

[8]3% more middle school students compared with students in schools where no teachers taught health for 2 consecutive years, $p < 0.10$

Results: Teaching Health Skills

A quality Health Education curriculum covers a range of health skills, like communication, decision-making, managing stress, and finding reliable health resources. This research found that an increase in the number of skills taught in the Health Education curriculum was associated with better high school student mental health outcomes.

Of the eight skills instructors were asked about, for every additional skill taught in their class:

> 1,000 fewer high school students reported **electronic bullying**[9]
>
> 1,250 fewer high school students reported **psychological distress**[10]

Educator and Student Interviews

In interviews, teachers were asked to identify units and topics from the New York City Public Schools' Health Education Scope and Sequence that they do and do not teach in their class. Emotional and mental health, sexual health, and nutrition were the Health Education topics taught most often. Most instructors used a curriculum that covers at least one topic within every unit. Personal health and safety, especially violence and injury prevention, were most often omitted from instruction. Other topics taught less often included alcohol and drug prevention, smoking and vaping, physical activity/ exercise, and communicable diseases.

When asked what they learned in class, student focus group participants shared the impact of the Health Education skills taught. Key statements focused on emotional regulation skills and healthy relationship skills.

> "Before I used to get angry and I would just go into things right away. But we did this practice in class once—I'm not sure the exact name—it was like we closed our eyes and felt what was happening. I used it once when my sister was making me angry and then I just kinda stopped talking to her before things got worse."
>
> *—Middle school student*

> "I felt like I learned what's a healthy relationship. In my family we don't really talk about our emotions, so for me healthy relationships weren't something that I was used to."
>
> *—High school student*

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[9]0.4% fewer for every additional skill addressed in health class, $p < 0.05$

[10]0.5% fewer for every additional skill addressed in health class, $p < 0.05$

Results: School Wellness Council Funding

A School Wellness Council is a group of parents, students, staff, and community members who work with the school administration to support health and wellness policies in schools. In this research, receiving School Wellness Council funding was the only Health Education practice associated with positive outcomes for both middle and high school students.

Students in schools with School Wellness Council funding reported better sexual health outcomes, including:

> 54% more middle school students reported **recent condom use** (among middle school students who reported being sexually active)[11]
>
> 6% fewer high school students reported **lifetime sexual activity**[12]

Educator and Student Interviews

In interviews, a few instructors stated clearly that their school had a School Wellness Council, but most interviewees were unsure what School Wellness Councils were or if their school had one. Those whose schools had a School Wellness Council shared that the councils were inconsistently active. Sometimes this was due to changes in personnel or to COVID interruptions. When asked what their School Wellness Council focuses on, interviewees listed activities including placing flyers and posters about health topics around the school, and health promotion events for students (on topics such as flu shots, diabetes and nutrition, drugs and alcohol, self-harm, and the New York City Public Schools Respect for All program).

> "Pre-COVID, [our School Wellness Council was] very active, and students were on the School Wellness Council as well....they focus on different events that we can do for the students to promote health in terms of whatever the health and wellness team wants to focus on that month. We also have focused on the health and wellness of the school community as a whole. Particularly on students, but on teachers as well."
>
> *—Middle school teacher*

[11] 54% more middle school students compared with students in schools that did not receive School Wellness Council funding, $p < 0.05$. This is based on a low number of sexually active middle school students.

[12] 6% fewer high school students compared with students in schools that did not receive School Wellness Council funding, $p < 0.05$.

Findings by Demographic Subgroups of Students

In addition to the findings above, this study examined health outcomes for subgroups of students based on race/ethnicity, sex, and sexual orientation/gender identity. Additional patterns emerged in the findings for the subgroups.

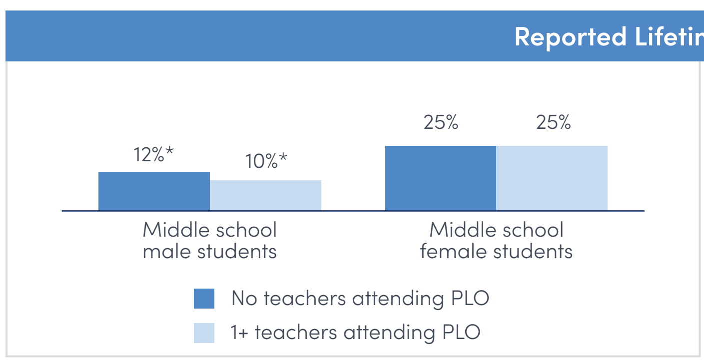
Training Health Teachers

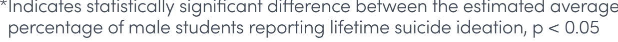
In middle schools with at least one teacher who attended a Health Education professional learning opportunity (PLO), two subgroups of students were less likely, on average, to report lifetime suicide ideation: male students and non-Hispanic white students.

As shown in the chart below, among male middle school students, those attending a school with at least one teacher who attended a Health Education PLO were less likely, on average, to report lifetime suicide ideation; however, there was not a statistical difference for female students.

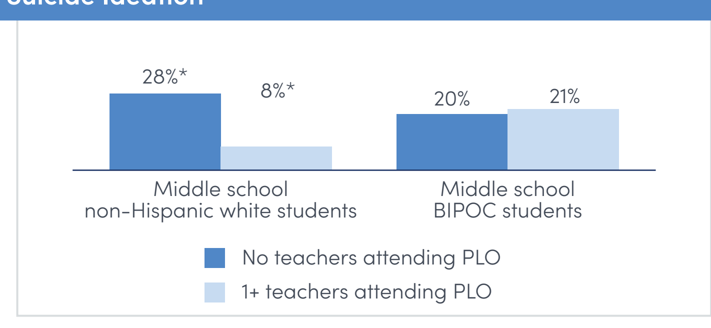
Similarly, among non-Hispanic white students, those attending a school with at least one teacher who attended a Health Education PLO were less likely, on average, to report lifetime suicide ideation; however, there was not a statistical difference for students who identified as Black, Indigenous, and People of Color (BIPOC).

Reported Lifetime Suicide Ideation





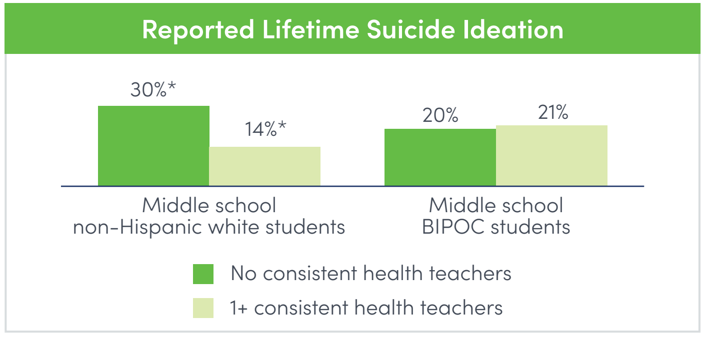
*Indicates statistically significant difference between the estimated average percentage of male students reporting lifetime suicide ideation, $p < 0.05$



*Indicates statistically significant difference between the estimated average percentage of non-Hispanic white students reporting lifetime suicide ideation, $p < 0.05$

Health Teacher Consistency

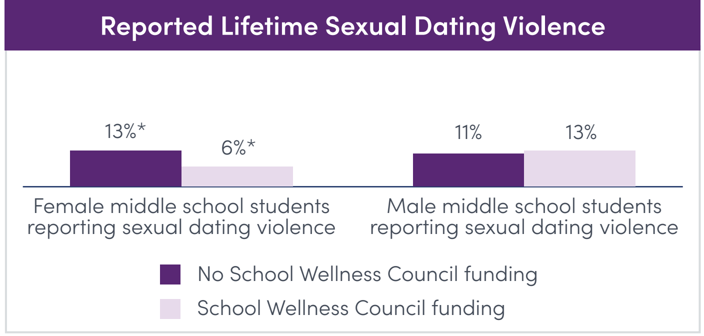
The association between health teacher consistency and mental health outcomes was unequal across subgroups of students by race/ethnicity. More specifically, in middle schools with at least one teacher who taught Health Education for at least 2 consecutive years, non-Hispanic white students were less likely, on average, to report lifetime suicide ideation. This difference was not found among middle school students who identified as BIPOC.



*Indicates statistically significant difference between the estimated average percentage of middle school non-Hispanic white students reporting lifetime suicide ideation, $p < 0.05$

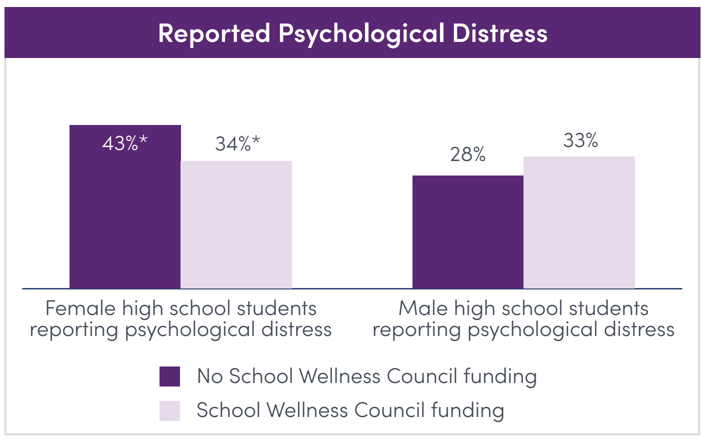
School Wellness Council Funding

The association between School Wellness Council funding and physical and mental health outcomes was unequal across subgroups of students by sex. More specifically, among female middle school students, those attending a school that received School Wellness Council funding were less likely, on average, to report lifetime sexual dating violence. Such differences were not found among male students.



*Indicates statistically significant difference between the estimated average percentage of female students reporting sexual dating violence, $p < 0.05$

At the high school level, females attending a school that received School Wellness Council funding were less likely, on average, to report psychological distress. Such differences were not found among male high school students.



*Indicates statistically significant difference between the estimated average percentage of female students reporting psychological distress, $p < 0.05$

Additional Findings about LGBTQ+ Students

This research found that two additional aspects of Health Education are important for the health of LGBTQ+ students: school-based health centers (SBHCs) and meeting Health Education requirements (54 hours for middle school students and a full semester for high school students).

Having a school-based health center was associated with better student health outcomes, including lower suicide ideation and attempts among middle school students, and a greater number of high school students getting tested for HIV. Additionally, LGBTQ+ high school students who attended a school with a SBHC were more likely to report getting tested for HIV and STIs than LGBTQ+ students in schools without a SBHC.

Fulfilling Health Education requirements was also associated with better student health outcomes, including fewer LGBTQ+ high school students reporting experiences of sexual dating violence. Importantly, in subgroup analyses, receiving a full semester of Health Education was associated with lower rates of suicide ideation for cisgender and heterosexual students, but not for LGBTQ+ students.

Methodological Notes

This study used a mixed methods approach, including both quantitative and qualitative data analysis.

Quantitative Analyses

The project first analyzed data aggregated from three sources to identify associations between Health Education practices and student health outcomes:

- Youth Risk Behavior Survey (YRBS): New York City's Department of Health and Mental Hygiene (DOHMH) provided de-identified student-level data from the 2017-2018 (middle school) and 2018-2019 (high school) YRBS.
- School Health Profiles data: The Office of School Wellness Programs provided school-level data from the 2016 and 2018 principal and health teacher School Health Profiles survey.
- Health Education data: The Office of School Wellness Programs provided school-level data from various New York City Public Schools tracking systems for each year from 2016-2017 through 2020-2021.

The following practices and outcomes were assessed in one or more quantitative analyses:

Health Education Practices

- Consistency of teacher assignment (2 years)
- Health Education PLO attendance
- Sexual health education-specific PLO attendance
- Health Education programming requirements (54 hours* or full semester‡)
- Health Education teacher certification
- School Wellness Council funding
- Skills addressed in Health Education curriculum‡

*Analyzed for middle schools only

Sexual Health Education Practices

- Sexual health topics addressed in Health Education curriculum
- Genders and Sexualities Alliances (GSAs)
- Required HIV lessons
- Placed a condom order during the school year‡
- Received sexual health education in middle school‡
- Received sexual health education in high school‡

‡Analyzed for high schools only

Student Health Outcomes

- Sexual dating violence (lifetime* and past-year‡)
- Past-year physical dating violence‡
- Bullying on school property (lifetime* and past-year‡)
- Electronic bullying (lifetime* and past-year‡)
- Psychological distress (lifetime* and past-year‡)
- Non-suicidal self-injury (lifetime* and past-year‡)
- Suicide ideation (lifetime* and past-year‡)
- Suicide attempt (lifetime* and past-year‡)
- Lifetime sexual intercourse*
- Condom use during most recent intercourse
- 30-day sharing of revealing or sexual photos*
- Use of non-withdrawal birth control during most recent intercourse‡
- Use of drugs/alcohol before most recent intercourse‡
- Past-year pregnancy‡
- Lifetime HIV test‡
- Past-year STD test‡

*Analyzed for middle schools only ‡Analyzed for high schools only

The first set of analyses were conducted at the school level using data from 22 middle schools and 77 high schools. Statistical models[13] identified significant associations between each individual Health Education practice and student outcomes. Additional models then identified combinations of Health Education practices that appear to be most important for a given student outcome.

The second set of analyses[14] were conducted at the student level using data from 2,300 students representative of about 175,000 middle school students and 8,776 students representative of about 250,000 high school students. Statistical models identified significant associations between each individual Health Education practice and student outcomes. Additional models were then used to determine instances where these associations differed based on student demographic characteristics (male, female; non-Hispanic white, BIPOC; and cisgender and heterosexual, LGBTQ+).

Qualitative Analyses

The findings from quantitative analyses were then used to develop focus group and interview questions for students, teachers, and administrators. Researchers conducted 14 interviews with teachers and administrators from 8 schools. These interviews covered school-level factors (e.g., schoolwide resources, use of Health Education Scope and Sequence) and instructor-level factors (e.g., Health Education certification, professional development). Student focus groups included 29 students from 6 schools and were centered around experiences in health class and how students put what they learned in health class into practice.

Focus groups and interviews were transcribed and analyzed using template analysis, an approach that uses a structured codebook while allowing for additional codes to emerge during the analysis process. The qualitative data supplements and provides context for the quantitative analyses; see the “Limitations” section below for notes about sample size and generalizability.

Student-level analyses were representative of approximately

175,000	250,000
Middle School Students	High School Students

Limitations

The key findings in this report highlight statistically significant associations between Health Education practices and student outcomes, but they are not intended to attribute differences in student outcomes solely to Health Education practices. Additionally, it is important to remember that a lack of statistical significance does not mean the Health Education practice is ineffective. The findings from this project do not capture all aspects of Health Education or all possible student health outcomes. Readers and decision-makers should think deeply about the context for the findings in this report before making changes to how Health Education is funded, structured, and prioritized.

The information gathered during focus groups and interviews is based on a small sample of individuals from 10 schools in a school system with more than 1 million students at the time of data collection. Although the data provides useful insights into student and teacher experiences of Health Education, it may not reflect the experiences of everyone in the district. It is possible that individuals affiliated with other schools have different experiences or are differentially impacted by factors that made them less likely to opt in to this portion of the study.

[13] School-level analysis used covariate-adjusted linear regression models and likelihood ratio tests

[14] Student-level analysis used covariate-adjusted logistic regression models and tests of moderation

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