

Assessing Student Attendance, Mental Health, Behavior & Recovery After a Hurricane



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FACTSHEET

2021

Hurricanes Matthew and Florence devastated communities in eastern North Carolina. The impacts on the lives of public school students are manifold and long lasting. Research shows that many children experience negative mental health effects after a disaster. Schools take a leading role in helping children to recover after a hurricane and get back on track academically, socially, and emotionally. This research brief examines some of the effects of Hurricanes Matthew and Florence on students in North Carolina and how schools assisted in their recovery.

How did Hurricane Matthew/Florence impact student attendance, mental health, and behavior in our schools and districts? And, how have schools supported students in recovering from the hurricanes?

To help answer these pressing questions, researchers from the University of North Carolina at Chapel Hill administered surveys and interviews to school personnel that were heavily impacted by Hurricanes Matthew and Florence. Through analysis of this survey and administrative data from the North Carolina Department of Public Instruction, researchers identified the effect of the hurricanes on student attendance, mental health and behavior as well as educators' perceptions of student recovery and the supports provided in selected schools heavily affected by the hurricanes.

Methods

The research team conducted interviews and administered an online survey to school personnel across 15 districts in North Carolina that participated in the study. These 15 districts were either heavily affected by Hurricane Matthew, Hurricane Florence or both. The team collected respondents' perceptions on the extent to which Hurricanes Matthew and Florence impacted their students' attendance, mental health and behavior. Lastly, the team collected educators' perceptions on mechanisms to improve recovery for students affected by hurricanes. Additionally, researchers used a Comparative Interrupted Time Series (CITS) design* to examine the change in attendance and behavior using administrative data. The remainder of this report shows the results of these analyses.

* A CITS design looks at how test scores change in affected districts relative to other schools and takes into account trends in test scores that were already occurring.



FIRST CASE: Hurricane Matthew

- 2016 hurricane season
- NC Impact: Oct. 7-8
- At least 600,000 students affected
- An estimated 4,000 evacuees
- 109 shelters

SECOND CASE: Hurricane Florence

- 2018 hurricane season
- NC Impact: Sep. 12-15
- At least 1.2 million students affected
- An estimated 5,214 evacuees
- 384 shelters

DATA COLLECTED:

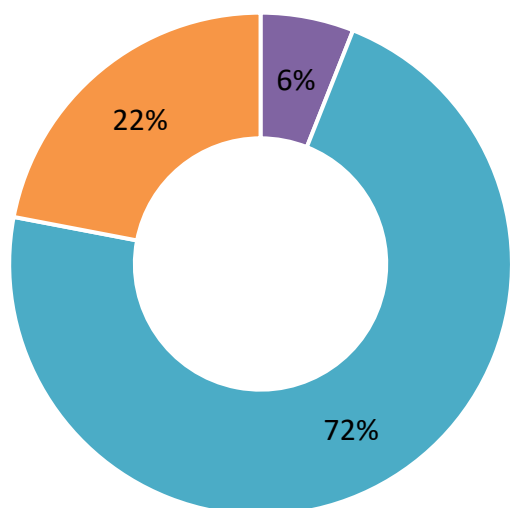
- Mar. - Jun. 2019
- 15 selected districts
- 53 interviews from school & district administrators
- 3,188 surveys from school & district personnel
- Administrative data for students in all schools in selected districts

Effects of the Storms on Students

What do educators think about student attendance following the storms?

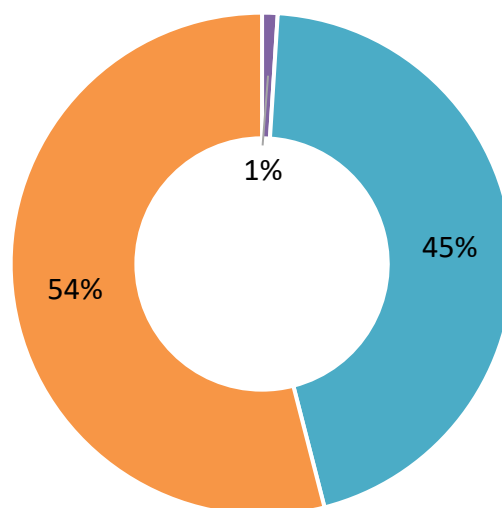
North Carolina educators were asked to compare their students' attendance from before and after Hurricanes Matthew and Florence. Respondents provided open-ended responses regarding the extent to which students' attendance improved, remained the same or worsened. Two hundred and twenty-nine educators addressed Hurricane Matthew and 1,027 educators addressed Hurricane Florence. Roughly 72% of respondents (n=124) stated seeing no change in students' attendance following Hurricane Matthew (Figure 1). Comparatively, over half of educators (54%) indicated seeing a regression in students attendance following Hurricane Florence (Figure 2). Some educators were unable to determine if the drop in attendance was due to a recent policy change or another aftereffect of the hurricanes. Overall, educators agreed that displaced students were more likely to face disruptions in their attendance as compared to their non-displaced peers. It is important to note that educators responded two years after Hurricane Matthew and eight months after Hurricane Florence. These differences in responses could also be a reflection of timing.

Figure 1. Attendance After Matthew



■ Better ■ Same ■ Worse

Figure 2. Attendance After Florence



■ Better ■ Same ■ Worse

Note: Responses that reflected "don't know", "n/a", or did not align to the question and deemed other, were not included in the count above. This represented 57 responses.

Note: Responses that reflected "don't know", "n/a", or did not align to the question and deemed other, were not included in the count above. This represented 228 responses.

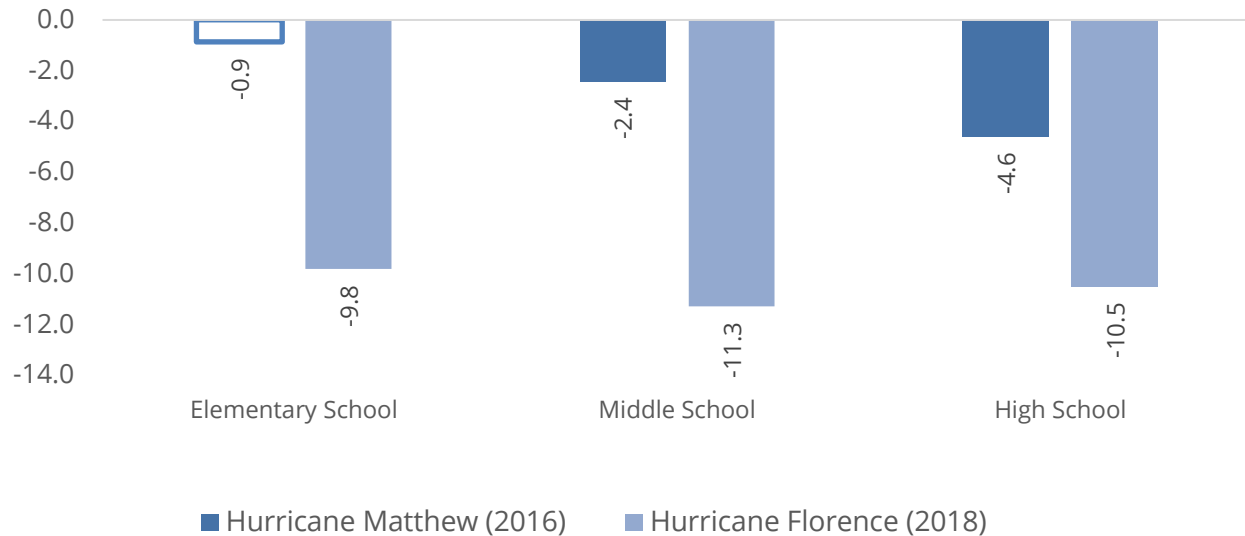
"Some kids lost a lot of time. One of the two towns we serve was flooded out, but our school was open anyways. One-third of my kids were not present during the time after the storm."

-School Personnel

How do the storms affect student attendance records?

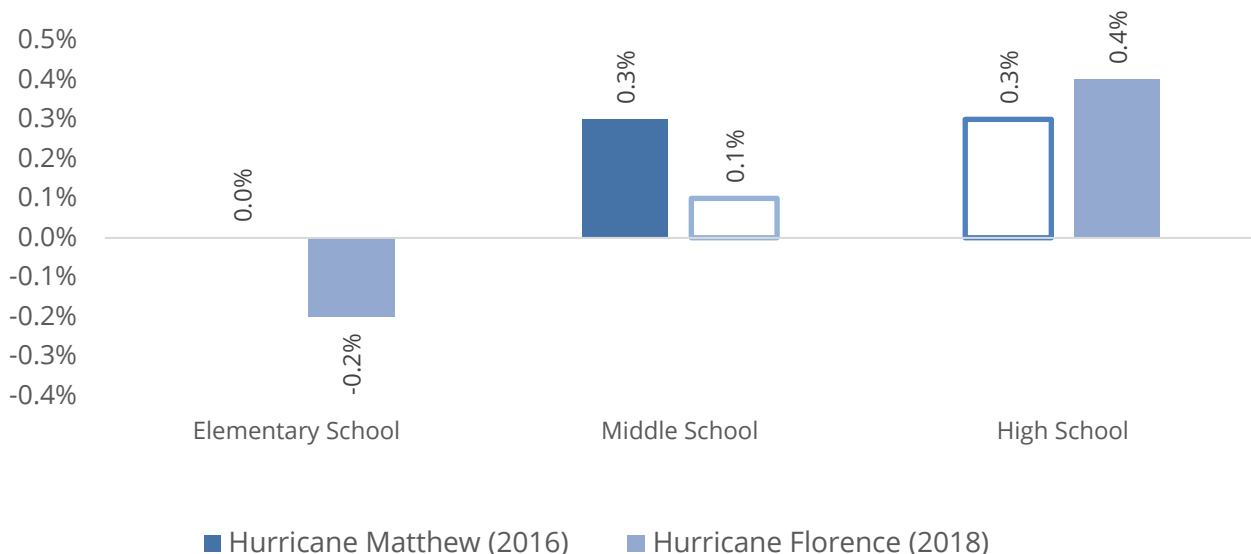
Hurricanes can impact student attendance in two ways. First, entire schools are often closed leading to fewer days of instruction. Second, individual students can miss school days due to disruptions in their personal lives. Figure 3 shows the effect of Hurricanes Matthew and Florence on the total number of days students were in school (a combination of school closures and individual absences). The loss of total days of school was much larger for Hurricane Matthew than Florence. Figure 4 shows the effect of the hurricanes on individual student absences on days schools were open. Students were rarely marked absent and sometimes even more likely to be in school. This difference between teachers' perceptions of student absences and recorded absences may reflect a greater willingness to be flexible with students who are tardy or miss part of a day following a disaster.

Figure 3. The Effect of Days in School in 15 Heavily Affected Partner Districts



Notes: Estimates in this figure come from CITS models with a rich set of student controls and school fixed effects for each district. Solid bars represent effect estimates that are statistically significant at the $<.10$ level. Standard errors are clustered at the school level. Effects are measured in days of school missed.

Figure 4. The Effect on Percent of Days Absent in 15 Heavily Affected Partner Districts

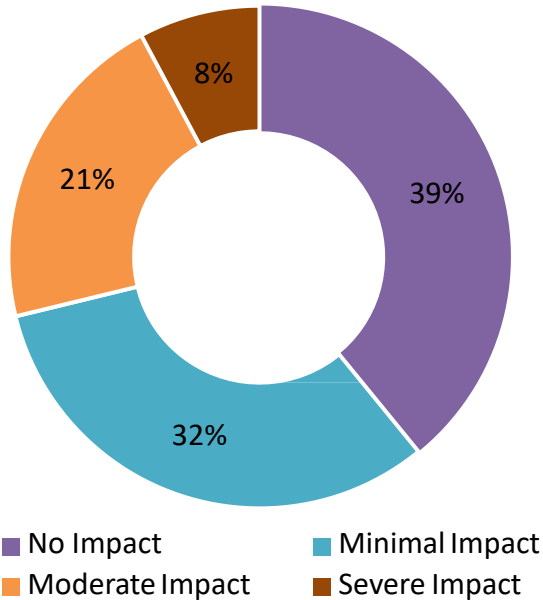


Notes: Estimates in this figure come from CITS models with a rich set of student controls and school fixed effects for each district. Solid bars represent effect estimates that are statistically significant at the $<.10$ level. Standard errors are clustered at the school level. Effects are measured in percent of all school days in membership that a student was absent.

What do educators think about student mental health following the storms?

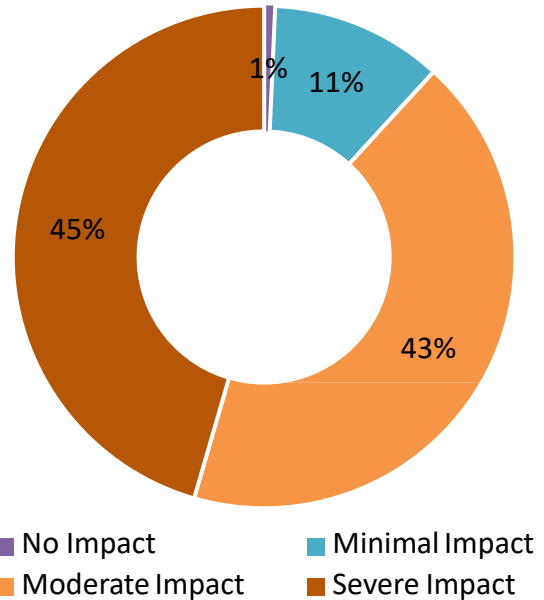
North Carolina educators were asked to rate the impact of the hurricanes on the mental health of students in their schools. As shown in Figure 5, most educators saw only a minimal or no impact from Hurricane Matthew on mental health. In comparison, the vast majority of educators indicated that Hurricane Florence had a moderate or severe impact on the mental health of students in their school (Figure 6). This difference likely reflects the time passed since Hurricane Matthew and signals that students are on their way to recovery.

Figure 5. Mental Health After Matthew



Note: This represented 396 responses.

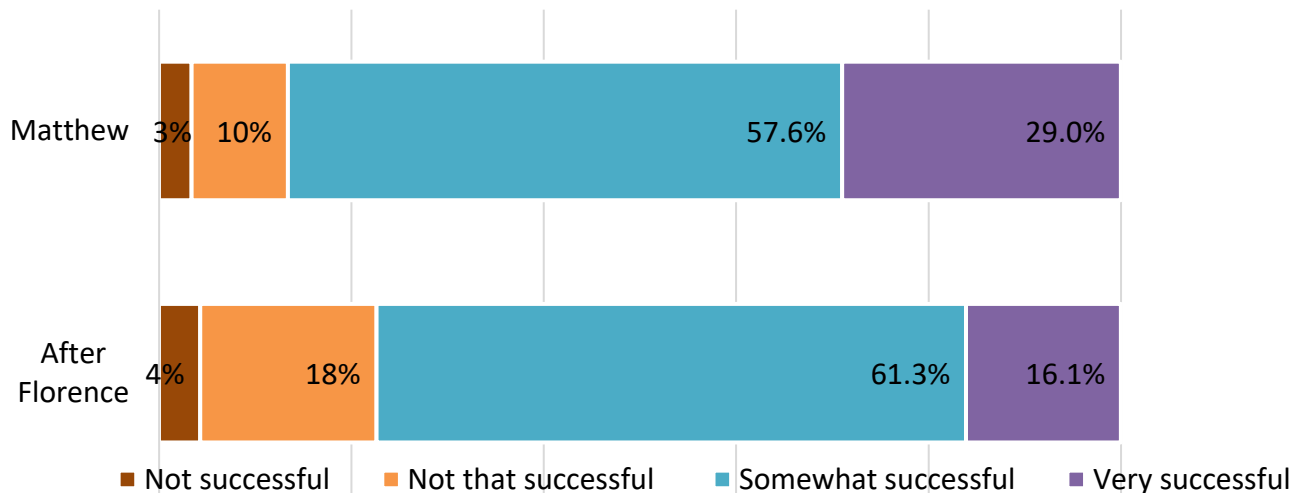
Figure 6. Mental Health After Florence



Note: This represented 1498 responses.

When educators were asked if the mental health supports provided to students in their schools were successful, the vast majority indicated that the supports were at least somewhat successful. Supports following Hurricane Matthew were viewed as particularly successful.

Figure 7. Educators' Perceptions of the Success of Mental Health Supports



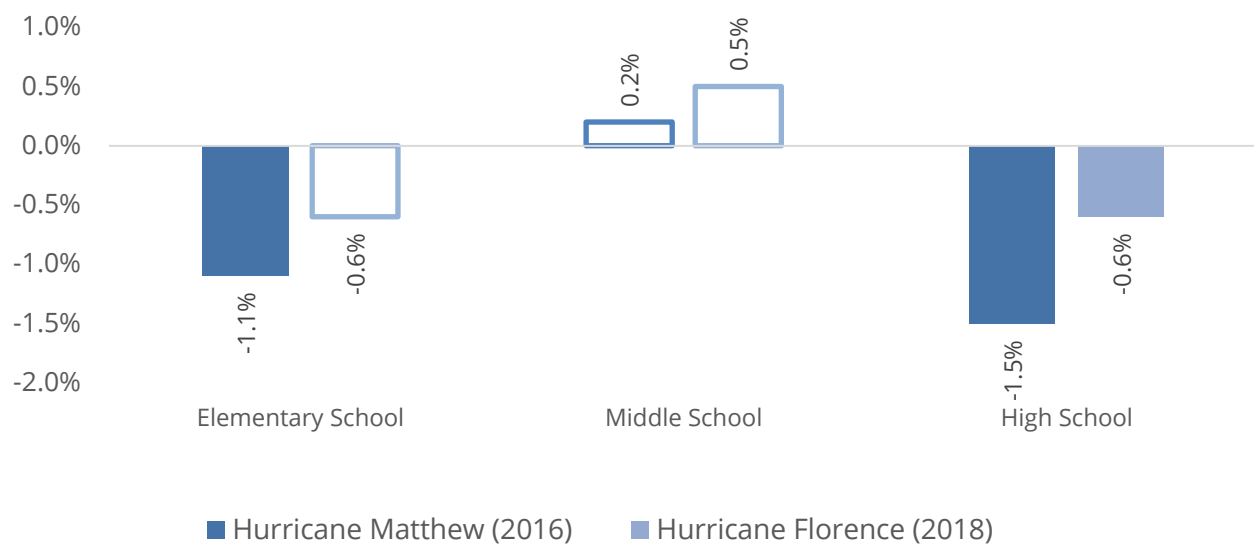


How do the storms affect student behavior?

Stress and mental health effects from experiencing a hurricane may lead students to act out in school. Only 17 of 1265 educators (1.3%) indicated that students' behavior improved since Hurricanes Florence and Matthew.

However, administrative data on absences (shown in Figure 8) suggest that students are *less* likely to be suspended following a hurricane. This difference between reported behavior from educators and actual punishments may reflect efforts made in schools to respond more supportively to behavior problems due to the effects of the storms.

Figure 8. The Effect on the Percentage of Students Suspended in 15 Heavily Affected Partner Districts



Notes: Estimates in this figure come from CITS models with a rich set of student controls and school fixed effects for each district. Solid bars represent effect estimates that are statistically significant at the $<.10$ level. Standard errors are clustered at the school level. Effects are measured in changes in the percent of students suspended during the school year.

A Step toward Recovery – Considering Supports

Schools implemented a variety of **supports** to students during recovery including flexibility on attendance and uniform policies, access to personal supplies to take home and free meals at school. Many schools adjusted bus routes to pick up displaced or stranded students. Others extended the school day or added additional days to the calendar to recoup some lost instructional time. Respondents also said that financial gifts and donations were instrumental in supporting students during recovery. Overall, participants reported that students were better equipped for instructional content once their other basic needs were met, and teachers and staff worked tirelessly to connect students with the resources and materials they needed.

Ways in which schools can support students during recovery include:

- Finding out what supports, supplies and resources students need as soon as school reopens. One school passed out index cards on the first day back and asked students to write down anything they need. School social workers and front office staff could also spend the day coordinating with local agencies and donation centers to meet these needs.
- Providing gas gift cards to families and staff who encounter transportation challenges that cannot be met with school buses.
- Being flexible and communicating directly with students and families who have been displaced or who have transportation challenges.

What kinds of supports were provided to students?

The districts provided students in need with many supports and resources following the disasters including,

- Shelter
- Food & water
- Clothing
- Cleaning and school supplies
- Gift cards
- Mental health counseling
- Transportation once school resumed



In addition, the school calendar was adjusted to forgive missed days of instruction and testing requirements. Districts made sure that school staff reached out to families to assess their needs and provide resources and referrals on where they could get help in the community. Some school districts helped families with utility bills, rent or even health care. Finally, districts ensured that kids returned to a safe school environment as quickly as possible to provide a sense of safety and normalcy either at their own school or at an interim school during recovery.

What supports were missing?

Various supports were deemed missing and in considerable need for both students and staff. These supports include having:

- mental health counselors.
- funding for school upkeep.
- recovery of lost instructional materials.
- online instructional support for lost days.
- affordable and clean long-term housing for displaced families.
- staff training on how to deal with trauma.
- flexibility with school testing and accountability.
- free meals for staff.
- mold mitigation assistance by professional air quality control personnel.

What supports are still needed?

Even though schools are mostly back to normal after the storm, students are often still in need of further assistance. These supports include having:

- mental health counseling for trauma relief.
- basic supplies for recovering families.
- transportation to and from school.
- free meals while at school.

What will help you better address students' needs following a disaster?

Many lessons have been learned in the wake of these hurricanes. These lessons include having:

- a modifiable, comprehensive and well-communicated disaster plan in place.
- generators available in all schools.
- a vast array of mental health counselors available for staff and students.
- strong relationships with community members and local partners/agencies that can help in times of need.
- access to online resources for both instruction and support.
- more caution around weather warnings and areas of potential impact.

Perceptions of Student Recovery

More than two-thirds of survey respondents said that students have fully recovered from Hurricane Matthew. However, they also said that the period of recovery took anywhere from one month to more than a year. Full recovery often required getting displaced students and families into stable housing. Interview participants reported that a lack of access to housing created stress and uncertainty for students, which often manifested in increased behavior issues at school. Others reported that the traumatic experience of the storm caused the reemergence of students' past experiences with trauma. In general, respondents agreed that their school provided a sense of normalcy and routine for students.

Participants recommended that teachers and administrators be patient and supportive during recovery by:

- Ensuring that appropriate counseling services are available.
- Being responsive to issues that may persist in the days, months and years of recovery. Participants indicated that there is a need for short- and long-term support services following a storm.
- Dedicating some time in school to allow students to process the storm through discussions, activities, drawing or journaling, but also using school as a place to establish routines and return to some sense of normalcy.

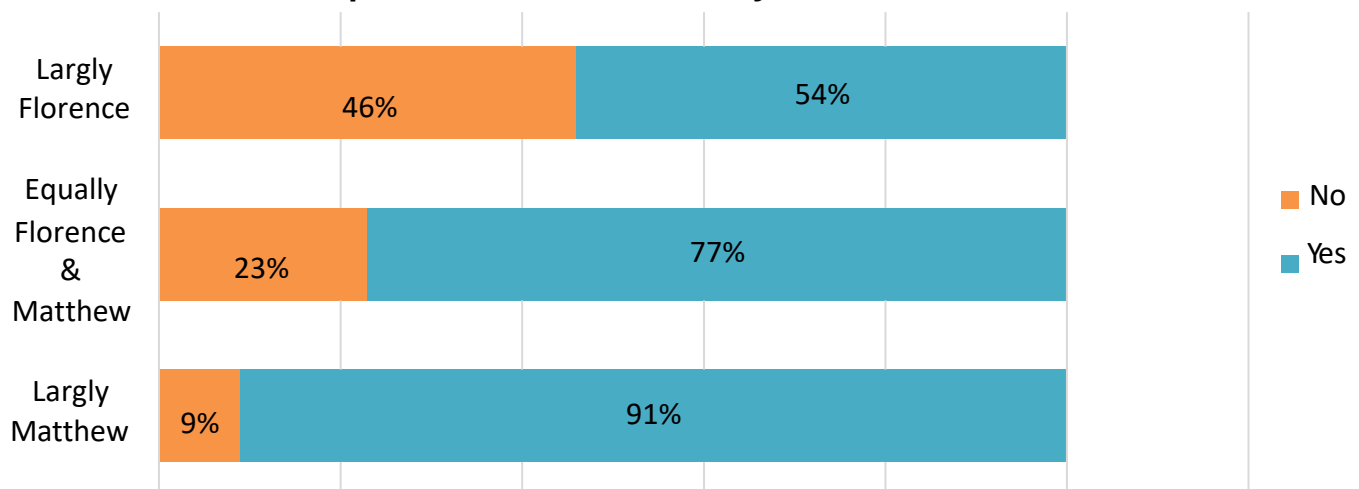
“Not all students have recovered from the storm. There are some of them that are still waiting to complete repairs to their homes or finding a place to live”

-School Personnel

Have students recovered from Hurricane Matthew?

North Carolina educators were asked to assess the extent to which students recovered from Hurricane Matthew. Overall, 1,403 respondents shared different perspectives on student recovery (Figure 9). Educators located in districts that were largely impacted by Hurricane Florence were more likely to agree (46%) that their students did not recover from Hurricane Matthew, as compared to respondents located in districts largely effected by both storms (23%) or largely by Hurricane Matthew (9%).

Figure 9. Educators' Perceptions of Student Recovery After Hurricane Matthew



Final Remarks

Overall, North Carolina educators reported disruptions to students' attendance, mental health, behavior and their ability to recover following Hurricanes Matthew and Florence. Our data shows that students lose days of instruction due to closures and their teachers report that absences are more common during this time. Educators indicate that their students' mental health is a common concern following a disaster. Our results also showed that educators reported greater problems with behaviors due to students struggling with mental health and disruptions to their schedules. However, administrative data shows that students are generally not suspended for behavior problems that arise. This likely reflects schools doing more in the wake of a hurricane to work with students to find other solutions for behavior problems. Lastly, educators indicated providing families and students with supports to assist with recovery. Provisions represented physical (e.g., clothing), emotional (e.g., mental health), and academic (e.g., books) items.

In conclusion, an educator's remarks on communal resiliency following a storm:

"It gives me such tremendous pride and joy to work for an organization that takes their role in supporting families very seriously and recognizes that [our] role is so much more than just the academic school day...I hated the hurricane, I hated what it did, but it proves community in ways that are surprising and beautiful. And I think we're stronger because of it. And, I think we're more kind and generous because of it."



This research was supported by a grant from the National Science Foundation.

The authors wish to thank the district and school personnel from regions impacted by Hurricanes Matthew and Florence and state education agencies, for providing their time and insight to inform the contents of this report. Members at the local, regional, state and federal levels graciously shared their stories and provided us with relevant information that may help to address the needs of schools and students after a hurricane. We are also thankful for the support from the North Carolina Department of Public Instruction, the North Carolina Governor's Office, the North Carolina Emergency Management and the Federal Emergency Management Agency.

The authors are solely responsible for any remaining errors.

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