

ON ALL SIDES

HOW RACE, ETHNICITY & GENDER INFLUENCE HEALTH RISK FOR TRANSGENDER STUDENTS OF COLOR

J. RHODES PERRY & SOMJEN FRAZER

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Perry, JR and Frazer, S (2020). *On All Sides: How Race & Gender Influence Health Risk for Transgender Students of Color*. Washington, DC: Advocates for Youth. Download Date. https://actionnetwork.org/forms/on-all-sides.

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ACKNOWLEDGEMENTS

The authors thank each individual who has been involved in this effort, including those whose research informed the creation of this survey item. We would like to recognize the team who worked on this report, including Yeonjae Lee and Abby El-Shafei for their diligent data checking, Erin Howe for her editorial contributions, and Abigail Miller for the graphic design and layout. We thank Deb Hauser for believing in this project and making it possible. We also thank our peer review team including Aiden Aizumi, Logan Casey, Cecilia Chung, Louis Ortiz-Fonesca, Amy Green, Araya Lester, Deborah S. Levine, Derrick Reyes, Diana Rhodes, and Maxwell Scales. A special thank you to Judy Yu, Dr. Michael Underwood, Rebecca L. Payne, Jennifer Augustine, Mary Beth Szydlowski, Emily Bridges, and the YRBSS coordinators from the 22 participating sites who shared their data informing this report. We sincerely thank the anonymous donor who provided generous support for this multi-year effort.

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INTRODUCTION

On All Sides: How Race, Ethnicity & Gender Influence Health Risk for Transgender Students of Color (Report) explores a new way of looking at intersectionality through the lens of quantitative research on transgender students living at the intersections of marginalized racial and ethnic identities. The term intersectionality describes the way multiple oppressions are experienced by an individual.[1]

Research presented in this report explores how transgender students of color experience health risk. Readers are encouraged to consider how the education systems meant to serve these students—schools and community supports—can account for the specific circumstances endured by transgender students of color, and address them with culturally responsive interventions, which can reduce health risk behavior and enhance health outcomes.

Why this Report?

For the first time in history, this report examines 19 sites that administered the YRBSS using the CDC's recommended transgender status question, and 3 sites who asked a modified version of this question.[2] The combined 22 sites examined in this report identified 2,555 transgender students, with the majority (60.8%) identifying as students of color. This large, diverse, population-based dataset offers an unprecedented opportunity to examine how health risk behaviors and outcomes differ not just between cisgender and transgender students or between students of different races and ethnicities, but rather the intersections of race, ethnicity, and transgender status.

We take as our premise that health disparities exist not because of the decisions of individual students but because of inequitable structures that drive access to the financial, educational, social and cultural resources that correlate with good health (Link and Phelan, 1995; Link, Phelan & Tehranifar, 2010). As more people become aware that experiences of prejudice such as racism, xenophobia, and transphobia have consequences for health, interest in the ways that intersections between these forms of discrimination has grown as well.

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1 The term intersectionality was first coined by Black legal scholar, Kimberle Crenshaw in her 1989 essay, *Demarginalizing the Instersection of Race and Sex: A Black Feminist Crtique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics*, found at: https://chicagounbound.uchicago.edu/uclf/vol1989/iss1/8/.

2 The 22 sites included 12 states: California, Colorado, Delaware, Hawaii, Maine, Maryland, Massachusetts, Michigan, New Mexico, Rhode Island, Vermont, and Wisconsin, and 10 districts: Boston, Massachusetts; Broward County, Florida; Cleveland, Ohio; Detroit, Michigan; District of Columbia; Los Angeles, California; New York City, New York; Oakland, California; San Diego, California; and San Francisco, California. Two states, California and New Mexico, and one district, Oakland, California asked a modified version of CDC's recommended question.

By showing how useful a transgender status question can be, not only in examining differences between cisgender and transgender students but also in understanding the interactions between the two, we hope to preserve and extend the use of this important survey question and also assist educators, policymakers, researchers, and advocates to design interventions that have a positive health and academic impact on transgender students of color. For example, the CDC has emphasized the importance of greater integration between health and education to improve students' cognitive, physical, social, and emotional development through its Whole School, Whole Community, Whole Child (WSCC) model. With the additional data provided by the transgender status survey question, state and district education and health agencies are now better positioned to understand linkages between race, ethnicity, transgender status and health risk behaviors and outcomes, which can help them make the case to obtain funding to design and implement culturally specific programs to redress these health disparities.

We examined each set of health outcomes (e.g. mental health, violence, drug use, etc.) by examining a broad set of indicators related to that outcome. Just as the CDC's 2019 Transgender Victimization Report focused on victimization behaviors, we re-examine these through an intersectional lens and extend our analysis to behaviors that are not related to victimization.

As demonstrated with sexual minority students, population-based surveillance research may reveal unexpected linkages or more complex patterns of association than can be assessed in small group research. Recognizing linkages between race, ethnicity and transgender status will allow educators, policymakers, researchers, and advocates to more effectively address bullying, harassment, and discrimination, promote inclusive education, foster safety at school, improve access to school-based and school-linked health services, and improve educational outcomes.

Building on research examining overall health risk behaviors and outcomes for transgender students, this report seeks to answer two primary research questions:

1. Among those health risk behaviors and outcomes that differ significantly between transgender and cisgender students, which also vary among different racial and ethnic groups?
2. Among those health risk behaviors and outcomes that differ significantly in the first question, which are also statistically significant at the intersections of race, ethnicity, and transgender identity?

How to Use this Report

This report serves four distinct audiences included below. Reading this report will help these distinct audiences gain the following:

1. **EDUCATORS** gain additional guidance on how to build more inclusive learning environments for transgender students of color.
2. **POLICYMAKERS** gain access to new research informing their ability to design education and health policies that meet the needs of transgender students of color.
3. **RESEARCHERS** gain increased awareness of the value of measuring transgender status when asking gender demographic questions and material to make a case for the importance of measuring the mechanisms tying intersectional identities to health risk behaviors and outcomes.
4. **ADVOCATES** gain additional research to make the case for building inclusive learning environments for transgender students of color.

The digital version of this report's table of contents allows readers to easily click on the sections they would like to review first. The items below offer a brief description of what each section of this report offers:

- **INTRODUCTION.** Offers context about transgender students of color, why the report was written, and the research questions the report attempts to answer.
- **LITERATURE REVIEW.** Directs readers to visit the findings section for specific literature known about transgender students of color for each of the 10 health categories.
- **METHODS.** Features the YRBSS measures used for this report, focal measures on how the authors categorize transgender status, race, and ethnicity, and statistical analysis.
- **FINDINGS**. Provides information about the demographics, a data key on how to read the findings, a description of the main effects of transgender status and of race and ethnicity. It also features graphs showing selected, illustrative interaction effects.
- **RECOMMENDATIONS**. Recommends actions to alleviate disparities by race, ethnicity, and transgender status, and the intersectional disparities found in the report.
- **FUTURE RESEARCH**. Offers a research agenda on how to continue expanding upon the broad analysis featured in this report.

In the digital version of this report, you will also find links in the Table of Contents and at the end of the report to four Appendices including a glossary of terms, important background about the YRBSS, works cited, information about the sample, comparisons between transgender and cisgender respondents, and the main effects of race and ethnicity.

Literature Review

As noted above, content presented in this report serves four different audiences, some of whom may have a specific topical interest—such as violence, alcohol use, or HIV testing—while others may have an interest in learning more about the concept of intersectionality as it applies to health disparities. In order to best address these competing interests, rather than writing a traditional literature review describing what is known about transgender students, about racial and ethnic health disparities, and about the intersections, we have elected to place concise summaries of the scholarly literature at the beginning of each of the 10 health categories in the findings section (e.g. related literature review information about alcohol is in the alcohol section). Note that language referenced in these shorter literature reviews reflects the cited authors' language choices and not our own (i.e., some cited literature refers to Black people and communities as "Black people and communities," or "African-American people and communities). While many activists have begun using the term BIPOC (Black, Indigenous and People of Color) to refer to some of the groups we discuss in this report, we have elected to use the term "students of color" when referring to API, Black, Latinx and other non-white participants in the YRBSS. We did this in order to more closely approximate the way the question was asked on the YRBSS, which does not emphasize Blackness or Indigeneity, but rather uses descriptions of race and ethnicity in five categories. This approach also better reflects our data analysis strategy, which examined intersections between a categorical variable (race/ethnicity) and transgender status.

In many cases, there may not be a consensus in the literature about racial and ethnic disparities, and there is an absence of literature about the differences between transgender and cisgender students, and the intersections of transgender students of color. For example, see the literature on marijuana use and race, or the patterns of use among students, which may have recently changed (e.g. literature on vaping). While both the authors and readers of this report would prefer that the information in the literature have a degree of certainty, we have elected to acknowledge when this is not the case. For example, when trends are changing or when different studies have shown different findings from one another.

Regardless of the gaps in the literature, one pattern is clear: most studies of health outcomes that compare transgender and cisgender students, other adolescents, or adults find that **transgender students experience greater health risk and outcomes** across a variety of health categories—risks that are not experienced as frequently or severely among cisgender students. Most readers will know that very little is known about transgender people of color, and even less about those who are still in school, beyond small amounts of HIV research focusing within transgender women of color populations.

Minority Stress Hypothesis

In addition to offering a literature review on each topic within each findings section, we briefly describe what is known overall about how people of color, transgender people, and those at the intersections come to experience poorer health outcomes than their counterparts. One model connecting experiences of marginalization to poor health is the "minority stress hypothesis".

Originally described by Meyer (2003) and expanded in a variety of more recent papers, the minority stress hypothesis posits that adverse external experiences such as prejudice and hate violence and internalized negative feelings, such as shame or internalized homophobia, cause poor health through both psychological and physiological mechanisms. For example, experiences of prejudice can increase anxiety among LGBTQ+ people, leading to selection of health-impacting coping mechanisms such as self-isolation or substance use. Stress increases production of cortisol, a hormone response that can create stress on body systems, particularly the cardiovascular system, which in turn creates poor physical health.

While studies of the minority stress hypothesis have been primarily conducted by examining one stigmatized identity at a time (e.g. race/ethnicity or gender identity) rather than intersectionality, a small number of studies have found intersectional effects; for example, intersectional effects were found in sexual minority women (Everett, Steele, Matthews & Hughes, 2019), sexual minority men (McConnell, Janulis, Phillips, Truong & Birkett, 2018), race/ethnicity and socioeconomic status *within* LGBTQ samples (Shangani, Gamarel, Ogunbajo, Cai & Operario, 2020). No study has used population-based data to examine the intersections between gender identity and race/ethnicity, however.

METHODS

Readers who are familiar with the YRBSS may wish to skip this section as it features the following items:

- **Survey History.** A brief description of the YRBSS instrument and history with respect to collecting gender identity and race/ethnicity data.
- **YRBSS Questions.** Important background on the measures and what's included in the YRBSS survey assessing health risk behaviors among high school students.
- **Statistical Analysis.** How the data were cleaned, inclusion criteria for the study (e.g. data completeness criteria) and how data were analyzed to produce the statistics in this report.

Survey History

The Youth Risk Behavior Surveillance System (YRBSS) is a biennial, school-based survey of adolescents in grades 9 through 12. The YRBSS, which is administered by the CDC, has been conducted since 1991 by the majority of states and some larger school districts. The survey method is designed to be representative of the population of high school students in that state or municipality. The purpose of the YRBSS is to identify the prevalence and trends of health risk behaviors and outcomes to improve policy and decision-making related to youth education, health, and safety.

YRBSS Survey Questions

The YRBSS consists of a set of standard questions about demographics, injuries, violence, suicide, sexual behavior, tobacco use, alcohol and other drug use, and dietary behaviors and physical inactivity, supplemented by states and districts with optional questions from a list recommended by the CDC (CDC, 2017). In order to draw the sample for the YRBSS, sites use a custom software program to draw two-stage cluster samples of schools and classes within sampled schools; the first sampling stage selections are drawn with proportional probability by the number of students enrolled in the school. The district sites featured in this report include only students in the funded school district (e.g., the San Diego Unified School District, not greater San Diego).

The sites studied use passive consent, meaning that students are surveyed unless their parents elect that their children opt out by submitting a form. During the course of the survey, a standardized script is read to students by a survey administrator, and the students then complete self-reported questionnaires. Information about the schools and the relevant

Measuring Race & Ethnicity*

The question wording approved by the 2017 CDC for use in the YRBSS and used in this report reads:

> Are you Hispanic or Latino?
> A. Yes
> B. No
>
> What is your race? (Select one or more responses.)
> A. American Indian or Alaska Native
> B. Asian
> C. Black or African American
> D. Native Hawaiian or Other Pacific Islander
> E. White

*** NOTE:** Sites across the country ask race and ethnicity questions in a variety of ways. Please reference the Methods section to learn more about how these data were organized.

population are used to weight the data. Data weights are created by Westat, the contractor tasked by the CDC with providing technical assistance for the YRBSS. These data are used to create a representative sample for each site. Data are weighted and merged in SAS, a commonly used data management and analysis program. The data can be analyzed in a variety of statistical programs that can account for the complex sampling design and weights.

The YRBSS standard questionnaire includes demographics (e.g., sex, race, ethnicity, age, grade, etc.). The question that YRBSS researchers code as "sex" asks "What is your sex?" with two answer options: "female" and "male." Because neither this question nor the question about transgender status (see below) distinguishes between sex assigned at birth and current gender identity, it is difficult to determine whether the transgender youth who participated self-identify as a cisgender or transgender female, a cisgender or transgender male, a different gender, or no gender at all, which is a significant limitation. Throughout this report, we will define "males" as individuals who selected male and "females" as individuals who selected female on this sex demographic item.

In 2017, sites could also measure "transgender status" by asking, "Some people describe themselves as transgender when their sex at birth does not match the way they think and feel about their gender. Are you transgender?" with the answer choices

being, “No, I am not transgender,” “Yes, I am transgender,” “I am not sure if I am transgender,” and “I do not know what this question is asking.” In 2017, this transgender status measure was used by 19 sites. Three additional sites—California, New Mexico and Oakland, California—asked modified transgender status questions that were also added to the datasets examined in this report.

Recognizing the need for broader public health research into health risk behaviors and outcomes associated with race, ethnicity and transgender status, researchers developed a series of best practices for asking questions to identify transgender and other gender minority respondents on population-based surveys (The GenIUSS Group, 2014). The transgender status question selected for the YRBSS measure uses a single-item approach allowing a respondent to assess their internal self-perceptions about gender. This approach was taken given that current YRBSS demographic questions do not separately measure a student’s assigned sex at birth and their current gender identity. Given this limitation, the YRBSS provided a single, optional question that defines the term transgender and asks a student to self-attest if they consider themselves transgender. The limitation section of this paper discusses the constraints of the single-item question and its implications for fully understanding the needs of transgender students.

Since 2007, the YRBSS has asked a question about race and ethnicity. See Measuring Race & Ethnicity*, page 10. Some sites use modifications of this CDC question that provide more detail about Hispanic/Latino, Asian and/or multiracial identities. Before data are released back to YRBS coordinators, data from these two questions are recoded by CDC for their reporting purposes to indicate whether students are American Indian/Alaska Native (only), Asian (only), Black or African American (only), Native Hawaiian or Other Pacific Islander (only), White (only), Hispanic/Latino and missing race, or any one race and Hispanic/Latino or any multiple races and Hispanic/Latino.

While outcomes are frequently measured in categories (see example below) many researchers choose to examine the prevalence of outcomes that have ever occurred in the timeframe (e.g. 0 times, answer A vs. at least 1 time, which would include answer options B, C, D and E).

During the past 30 days, how many times did you ride in a car or other vehicle driven by someone who had been drinking alcohol?
A. 0 times
B. 1 time
C. 2 or 3 times
D. 4 or 5 times
E. 6 or more times

Analysis

ASSEMBLING AND CLEANING THE DATASET

The first author requested data from all 22 sites that asked the CDC recommended question or an alternate question about transgender identity; all sites gave permission for the CDC to release their data that includes information about transgender identities. The data were merged in Stata, a commonly used statistical package which can account for the complex sampling design used in the YRBSS (Kann et al., 2014). Race and ethnicity were examined for sample size sufficiency and were recoded into five categories: Asian, Native Hawaiian and Pacific Islander (only), Black or African American (only), Hispanic and Latinx, regardless of other race categories, white (only) and all other cases (including American Indian and multiracial respondents). The original question about transgender identity was recoded to a binary (1=transgender, 0=Not transgender, not sure, or don't know. Please see below for a discussion of sensitivity analysis). Alternate questions were recoded into the same binary, meaning that a small number of gender nonconforming respondents may have been included in the transgender category.

While the CDC does consistency checks and cleaning of the dataset, researchers often decide to do additional cleaning. In this case, in order to be included in the dataset, respondents must have valid answers for age, the transgender identity question and sex. The total dataset included 127,949 respondents who met these criteria, of whom 2,555 were transgender.

STATISTICAL ANALYSIS

All statistical analysis were performed in Stata. After data were combined into a single data set across sites, they were checked for agreement with the codebooks provided by each site.

Logistic regression was used to examine main effects of transgender status and race with further analysis of interaction effects occurring only if main effects were found to be statistically significant. Following the guidance available from the CDC, proportions and regressions were calculated using the SVY family of procedures (Kann et al., 2014). Frequencies (weighted and unweighted) were performed on all variables used in analysis.

Weighted estimates of the population were rounded to the nearest hundred and percents were rounded to two significant digits. Following the criteria established by the CDC for sexual minority youth (Brener et al., 2004 & CDC, 2018), we do not report statistics that represent fewer than 25 respondents (unweighted) in the denominator. In addition, we do not report any data that include categories with five or fewer respondents in the numerator due to potential concerns about confidentiality. All analyses were checked for sufficient sample size.

All statistical analyses were checked for accuracy by a second analyst. Stata code for replication purposes is available upon request to the second author.

Unless otherwise specified, the cutoff for statistical significance for an individual statistic is a p-value less than or equal to .05;

for the overall interaction effects between race and gender identity, the F-statistic cutoff was p<=.20. In order to be included in the report in a graph, an outcome had to have a statistically significant odds ratio in a logistic regression with gender identity alone as the predictor and also have a statistically significant (p<=.20) interaction effect in a regression controlling for the main effects. The following key has been provided when viewing the data charts in Appendix III:

*** p≤.001 ** p≤.01 * p≤.05

Within the ten health categories examined, if more than one outcome had a statistically significant interaction effect, one illustrative graph was chosen in order to preserve the succinctness of the report. Please note that the bivariate analyses shown in tables produces slightly different prevalences (percents) than the graphs show; this is due to the additional control variables and interaction effects used in the analyses in the graphs.

What is Mischievous Responding?

Recent research has raised questions about whether sexual orientation health disparities found in YRBSS data are in part artifacts of "mischievous responders." Mischievous responders are those who answer survey questions in ways that they find humorous, often selecting extreme or contradictory responses (Cimpian, 2017; Cimpian, Timmer, Birkett, Marro, Turner, & Phillips, 2018; Furlong, Sharkey, Bates & Smith, 2004). Additional research suggests that mischevious responders are more likely to indicate they are sexual minorities when this is not the case (Cimpian, 2017 & Cimpian et al., 2018) and that these patterns can be detected by re-examining regression results using a sample weighted using weights created in a boosted regression procedure. The researchers for this report tested both main effects for gender identity and interaction effects and have shown only those findings that were robust to this type of sensitivity analysis. For copies of the code used for sensitivity analysis, please contact the second author.

FINDINGS

This section shows information about the demographics, a data key on how to read the findings, a description of the main effects of transgender status and of race/ethnicity and finally, graphs showing selected, illustrative interaction effects.

Demographics

This section describes the dataset used in the analysis that makes up the main body of this report. There were 127,949 students in the dataset, of whom 1.23%, or 2,555 were transgender. Using CDC-calculated weights, it is estimated that this represents 3,388,573 high school students, of whom 41,834 are transgender. Most of the data, 85.2% came from states and 14.8% from districts.

TABLE 1: STATE AND DISTRICT DISTRIBUTION

Site	Unweighted N	Weighted N	Weighted %
Boston	1,527	15,355	0.5
Broward County, FL	859	60,459	1.8
California	1,153	1,247,256	36.8
Cleveland	1,752	11,837	0.3
Colorado	1,258	203,249	6.0
Delaware	2,806	38,497	1.1
Detroit	1,385	12,687	0.4
Hawaii	5,505	39,174	1.2
Los Angeles	1,349	86,778	2.6
Maine	8,963	52,226	1.5
Maryland	46,309	224,380	6.6
Massachusetts	3,166	280,783	8.3
Michigan	1,570	416,518	12.3
New Mexico	5,201	89,599	2.6
New York City	9,350	254,267	7.5
Oakland	1,840	8,849	0.3

TABLE 1: STATE AND DISTRICT DISTRIBUTION			
Site	**Unweighted N**	**Weighted N**	**Weighted %**
Rhode Island	2,129	39,571	1.2
San Diego	2,341	26,746	0.8
San Francisco	2,398	14,964	0.4
Vermont	19,696	26,071	0.8
Washington DC	5,569	10,234	0.3
Wisconsin	1,823	229,072	6.8

Table 2 shows the demographics of transgender and cisgender students.

TABLE 2: DEMOGRAPHICS BY GENDER IDENTITY								
Predictor	**Identifies as Transgender**				**No/Not Know/Not Understand**			
	Sample N	Weighted N	Weighted %	Confidence Interval	Sample N	Weighted N	Weighted %	Confidence Interval
Sex								
Female	1,091	18,587	44.4%	(38.3%–50.8%)	64,348	1,657,301	49.5%	(47.1%–51.9%)
Male	1,464	23,247	55.6%	(49.2%–61.7%)	61,046	1,689,437	50.5%	(48.1%–52.9%)
Age								
12-14 years old	532	7,878	18.8%	(14.5%–24.1%)	21,046	477,889	14.3%	(12.3%–16.6%)
15 years old	619	11,189	26.8%	(21.4%–32.9%)	33,265	830,858	24.9%	(22.2%–27.7%)
16 years old	608	8,570	20.5%	(16.0%–25.9%)	32,937	859,414	25.7%	(23.2%–28.4%)
17 years old	553	9,618	23.0%	(16.8%–30.6%)	28,022	784,489	23.5%	(21.5%–25.6%)
18 years old	238	4,565	10.9%	(7.5%–15.6%)	10,003	388,597	11.6%	(9.6%–14.1%)

TABLE 2: DEMOGRAPHICS BY GENDER IDENTITY								
Predictor	**Identifies as Transgender**				**No/Not Know/Not Understand**			
Race and Ethnicity								
API	223	3,174	7.6%	(4.7%–11.9%)	11,926	285,496	8.5%	(6.3%–11.5%)
Black	531	7,698	18.4%	(12.9%–25.6%)	21,371	402,750	12.0%	(9.8%–14.7%)
Latinx	254	5,187	12.4%	(9.2%–16.5%)	14,483	638,926	19.1%	(15.9%–22.7%)
White	945	16,383	39.2%	(32.0%–46.9%)	58,476	1,377,570	41.2%	(36.0%–46.6%)
All Other POC	602	9,393	22.5%	(14.0%–34.1%)	19,138	641,996	19.2%	(15.8%–23.0%)
Gender Expression								
Conforming	686	7,964	44.4%	(39.2%–49.6%)	55,492	794,610	81.2%	(80.3%–82.0%)
Androgynous	204	2,509	14.0%	(11.0%–17.6%)	7,645	117,974	12.1%	(11.4%–12.7%)
Non-Conforming	740	7,478	41.7%	(36.5%–47.0%)	4,776	66,438	6.8%	(6.3%–7.3%)
Sexual Orientation								
Heterosexual (straight)	913	16,525	41.1%	(34.6%–48.0%)	105,151	2,863,331	86.5%	(85.4%–87.5%)
Gay or lesbian	546	8,358	20.8%	(15.8%–26.9%)	3,153	74,408	2.2%	(1.9%–2.7%)
Bisexual	651	9,114	22.7%	(18.3%–27.8%)	9,700	222,801	6.7%	(6.2%– 7.3%)
Not sure	319	6,163	15.3%	(11.2%–20.7%)	6,045	150,113	4.5%	(4.0%–5.1%)

The table above shows that transgender students are similar to cisgender students in that they are about equally likely to self-identify as female (44.4% among transgender students vs. 49.5% among cisgender students). They are distributed similarly by age, grade and race. However, transgender students are much more likely to identify themselves as gay or lesbian (20.8% vs. 2.2%), bisexual (22.7% vs. 6.7%) or not sure of their sexual orientation (15.3 vs. 4.5%). They are also much more likely to indicate that they are gender nonconforming (41.7% vs. 6.8%).

DATA KEY

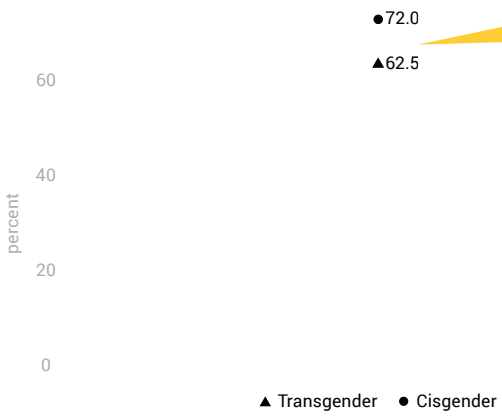
This box describes how we've chosen to represent complex statistical ideas in colorful, easy-to-read graphics. For ease of reading, all graphics use the same legend, with the same colors and symbols representing the same things across all charts.

The data are represented here in two types of categories: transgender and cisgender and five race categories.

- ▲ TRANSGENDER
- ● CISGENDER
- API
- BLACK
- LATINX
- WHITE
- ALL OTHER

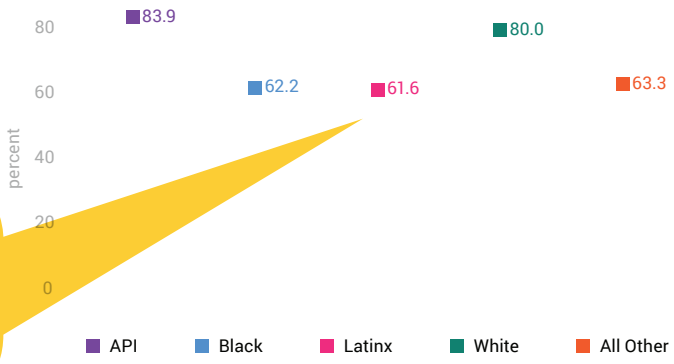
The graph below on the left shows the percent of cisgender and transgender youth who reported getting mostly As and Bs. The graph below on the right shows the prevalence of getting mostly As and Bs by race.

GETS MOSTLY As AND Bs BY GENDER IDENTITY



Fewer transgender students (62.5%) reported getting mostly As and Bs than did cisgender students (72.0%).

GETS MOSTLY As AND Bs BY RACE



More than four in five API students, 83.9%, (in purple) got As and Bs, as did 62.2% of Black students (in blue), 61.6% of Latinx students (in pink), 80.0% of white students (in green) and 63.3% of all other students (in orange).

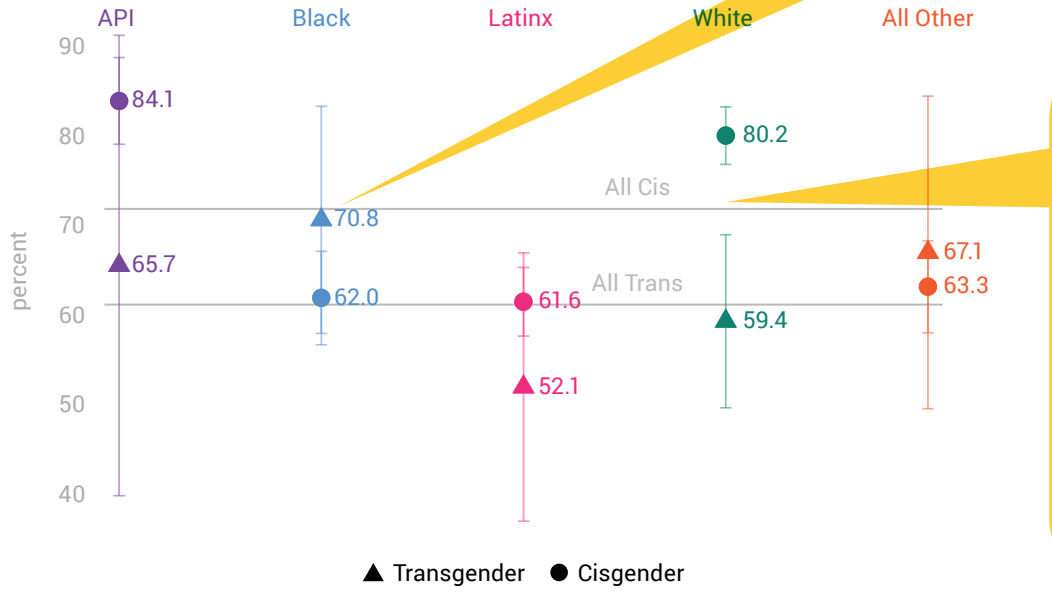
PREVALENCE - The percents shown on the graphs are "predicted prevalences", meaning they show the prevalence among a subgroup (such as Black transgender students, or API cisgender students) produced by regression analyses including the main effects of gender identity and race as well as their interaction terms. Because these are predictions produced by regression, they are are slightly different from sample percents shown.

DATA KEY

When we compare cisgender and transgender students by race, we can see from the graph below that despite the fact that transgender students overall are *less* likely to report that they received mostly As and Bs, this pattern varies by racial and ethnic groups.[1]

As discussed in the introduction, this paper explores a new way of looking at intersectionality through the lens of quantitative research on transgender students living at the intersections of marginalized racial and ethnic identities. From a statistical perspective, **intersectionality is not just additive, it is multiplicative—or in statistical terms, an interaction effect.** The statistic of interest in this report shows the *multiplicative* effect of interactions between transgender identities and race. Also known as an "interaction effect", this section explores how this shows up in a variety of different health risk behavior categories.

GETS MOSTLY As OR Bs BY GENDER IDENTITY AND RACE



Notably, Black transgender students were *more* likely than Black cisgender student to report that they received mostly As and Bs (70.8% vs. 62.0%).

Within API, Latinx and white students, transgender students are less likely to report that they get mostly As and Bs; however, the size of the gap differs, meaning the size of the effect of being transgender differs across different races.

1 The overall prevalence of getting As and Bs by race is not shown on the graph because it is very close to the numbers shown for cisgender students by race. This is because the overwhelming majority of students of each race are cisgender, making the prevalence among cisgender students and among all students very similar.

YRBSS Health Risk Category

The sections below describe the findings of the analysis of YRBSS data examining 10 health categories, each with a number of different outcomes included:

1. Sadness and suicidality
2. Driving
3. Sexual health
4. Sexual and dating violence, and sexual assault
5. Alcohol use
6. Tobacco use
7. Marijuana use
8. Other illicit drug use
9. Food, weight and physical activity
10. Other health and well-being

Unlike traditional research papers, which often focus on one outcome or a small number of related outcomes, we have chosen to examine all YRBSS outcomes on the standard questionnaire for which we have sufficient sample size. Each section follows a similar pattern, opening with a short literature review on what is known about differences between health risk behaviors and outcomes between first, transgender and cisgender students and second, racial and ethnic groups of adolescents (and in rare cases, the intersection of the two).

In some cases, our search revealed no literature on a topic or findings were mixed; we have noted that in each section. Each section then describes the differences between *all* transgender and cisgender students, showing the prevalence of the risk and outcomes of interest among all transgender students and all cisgender students and noting when these are statistically significantly different.

The tables showing the differences by race and ethnicity are in Appendix III; these are not shown in the main body text because they are very close to the predicted prevalences shown in the chart for cisgender students by race and ethnicity (because there are so many more cisgender students than transgender students in the sample) and readers may find this repetitive.

Finally, the outcomes that can be predicted by statistically significant interaction effects (controlling for main effects) are shown in the Data Key for a more detailed guide on how to read these graphs. The graphs show the "predicted prevalence" of the behavior within a specific group at the intersection of gender identity and race, taking into account the individual effects of gender identity and race. The percentages readers can see on the graph represent the multiplicative or intersectional component of the propensity to take part in that particular risk behavior or outcome, putting aside (as one never could do in real life) the main effect of being transgender *or* race.

1. Sadness and Suicidality

PREVIOUS LITERATURE

Depression, suicide and sadness are areas where there is comparatively more and better-quality research on transgender youth and adults than many of the other health categories described in this report. Transgender youth and adults experience higher prevalence of depression and depressive symptoms in comparison to cisgender youth and adults (Budge et al., 2013; Reisner et al., 2015a; Reisner, Katz-Wise, Gordon, Corliss & Austin, 2016), and both population based studies (Perez-Brumer, Day, Russell, & Hatzenbuehler, 2017) and other studies have found that transgender youth are more vulnerable to suicidal ideation and behavior (Grossman & D'Augelli, 2007; Reisner et al., 2015a). Studies also demonstrate higher prevalence of suicidal behavior among transgender adults (Haas, Rodgers & Herman, 2014; James et al., 2016).

More studies have been conducted comparing racial and ethnic groups' experiences of sadness and suicidality than have been conducted comparing transgender and cisgender experiences. These studies consistently find that Latinx adolescents are more likely than white, Black and Asian adolescents to experience depressive symptoms (Siegel, Aneshensel, Taub, Cantwell & Driscoll, 1998; Kann et al., 2018; Guiao & Thompson, 2004; McLaughlin, Hilt, & Nolen-Hoeksema, 2007); however, the patterns by race and ethnicity are different for suicide than for depressive symptoms. While not all articles compare all racial groups, overall the literature suggests that white and Indigenous youth are more likely to attempt suicide than Black, Latinx and API youth (Borowsky, Resnick, Ireland & Blum, 1999; Cash & Bridge, 2009; Lindsey, Sheftall, Xiao & Joe, 2019; May, 1987; Shaughnessy, Doshi & Jones, 2004; Wallace, Calhoun, Powell, O'Neil & James, 1996; Wong, Sugimoto-Matsuda, Chang & Hishinuma, 2012).

TRANSGENDER AND CISGENDER DATA

See Sadness and Suicide Risk Behaviors, page 55

This report found, as expected, that *sadness and suicidality* differ significantly between transgender and cisgender students. For example, 54.4% of transgender students report feeling sad or hopeless, while 31.2% of cisgender students report this.

RACE AND ETHNICITY DATA

See Sadness and Suicide Risk Behaviors, page 55

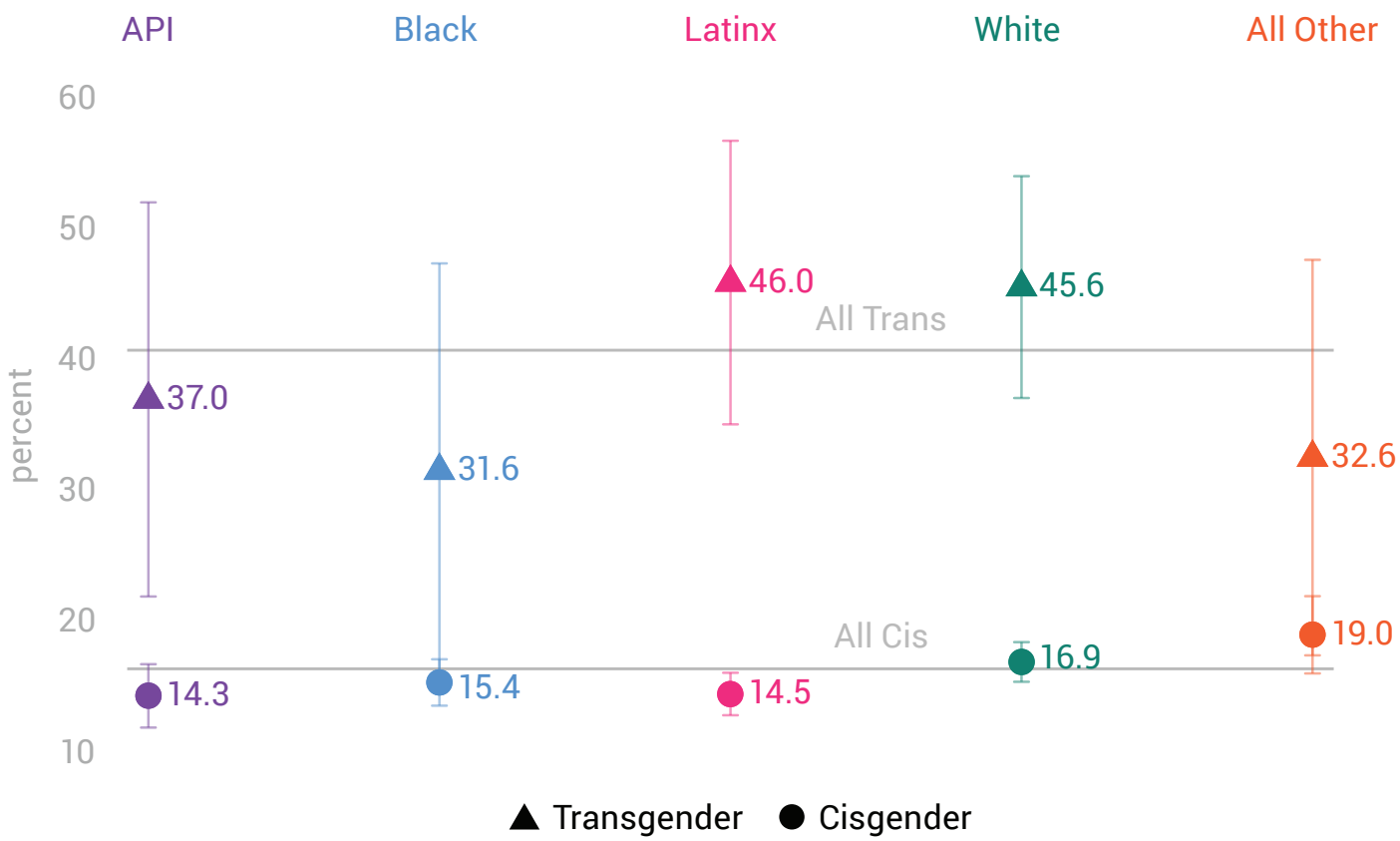
These indicators varied less by race, with statistically significant differences overall found for the indicators: Felt Sad or Hopeless, Seriously Considered Attempting Suicide, and Having Ever Attempted Suicide. Consistent with previous studies, this report found that a slightly higher proportion of Latinx (32.1%) students reported feeling sad or hopeless in comparison to white (30.2%), Black (28.9%), and API (27.2%) students, with statistical significance found across groups. The data on the prevalence of attempted suicide, however, contrasts with that of previous findings. While the literature review found that white youth were more likely to attempt suicide, this report found that a higher percentage of Black youth (9.9%) reported having ever attempted

suicide than did Latinx (8.9%), API (7.7%), and white (6.7%) youth. This, too, was found to be statistically significant.

TRANSGENDER STUDENTS OF COLOR DATA

In the graph below, the predicted prevalence of seriously considered attempting suicide among transgender students is 40.8%, while it is just 16.4% for cisgender students (please see Data Key for predicted prevalence and other statistics); this means that transgender students are 2.5 times as likely as cisgender students to experience this health risk. The largest gap is among Latinx youth, where transgender Latinx students are 3.2 times as likely as Latinx cisgender students to experience seriously considered attempting suicide.

PREVALENCE OF HAVING SERIOUSLY CONSIDERED SUICIDE



2. Driving

PREVIOUS LITERATURE

There is almost no literature on the driving and risk behaviors of transgender students. Studies were found that examined racial and ethnic disparities in the outcomes described in this section, such as not wearing seat belts, driving after drinking, riding with a driver who had been drinking, and texting or emailing while driving. Not all studies included all racial and ethnic groups, and thus there is no evidence that one particular ethnic or racial group is most likely to engage in unsafe driving behavior.

For example, several studies have found that Black youth and adolescents are less likely to wear seatbelts than their white and Hispanic counterparts (Briggs, Lambert, Goldzweig, Levine & Warren, 2008; Eaton et al., 2010a; Eaton et al., 2012; Kann et al., 2014; Kann et al., 2016; Kann et al., 2018; Shults, Haegerich, Bhat & Zhang, 2016). Some studies have found that API students were less likely (Wechsler, Lee, Nelson & Lee, 2003) and Native American youth were more likely (Chou et al., 2006) to drive after drinking than were Black, white and Hispanic youth. Hispanic youth were most likely to report they rode with a driver who had been drinking compared to Black and white youth (Eaton et al., 2010a; Eaton et al., 2012; Kann et al., 2014; Kann et al., 2016; Kann et al., 2018). The prevalence of texting or emailing while driving is higher among white youth than Black and Hispanic youth (Eaton et al., 2012; Kann et al., 2014; Kann et al., 2016; Kann et al., 2018;Li, Shults, Andridge, Yellman, Xiang & Zhu, 2018; Rudisill & Zhu, 2015).

TRANSGENDER AND CISGENDER DATA

See Driving Risk Behaviors, page 56

While there is a scarcity of literature on gender identity disparities in risky driving behavior, this report found that there are disparities in all four indicators of risk behavior, such that transgender students are more likely than cisgender students to report each. For example, 12.3% of transgender students reported rarely or never wearing a seatbelt compared to 5.7% of cisgender students. The largest disparity was found in rates of driving after drinking, with 17.3% of transgender students having reported this risk behavior in comparison to 4.2% of cisgender students. The data also illustrates that more than half (51.5%) of transgender students have texted or emailed while driving a car or other vehicle compared to 35.1% of cisgender students.

RACE AND ETHNICITY DATA

See Driving Risk Behaviors, page 56

As found in previous literature, Black youth were most likely to report rarely or never wearing a seatbelt (7.9%) when compared to API (6.2%), Latinx (4.0%) and white (4.6%) counterparts. Also similar to previous studies, this report found that having ridden with a driver who had been drinking alcohol is most prevalent among Latinx youth (17.2%) when compared to Black (16.6%), white (13.5%) and API (11.0%) youth.

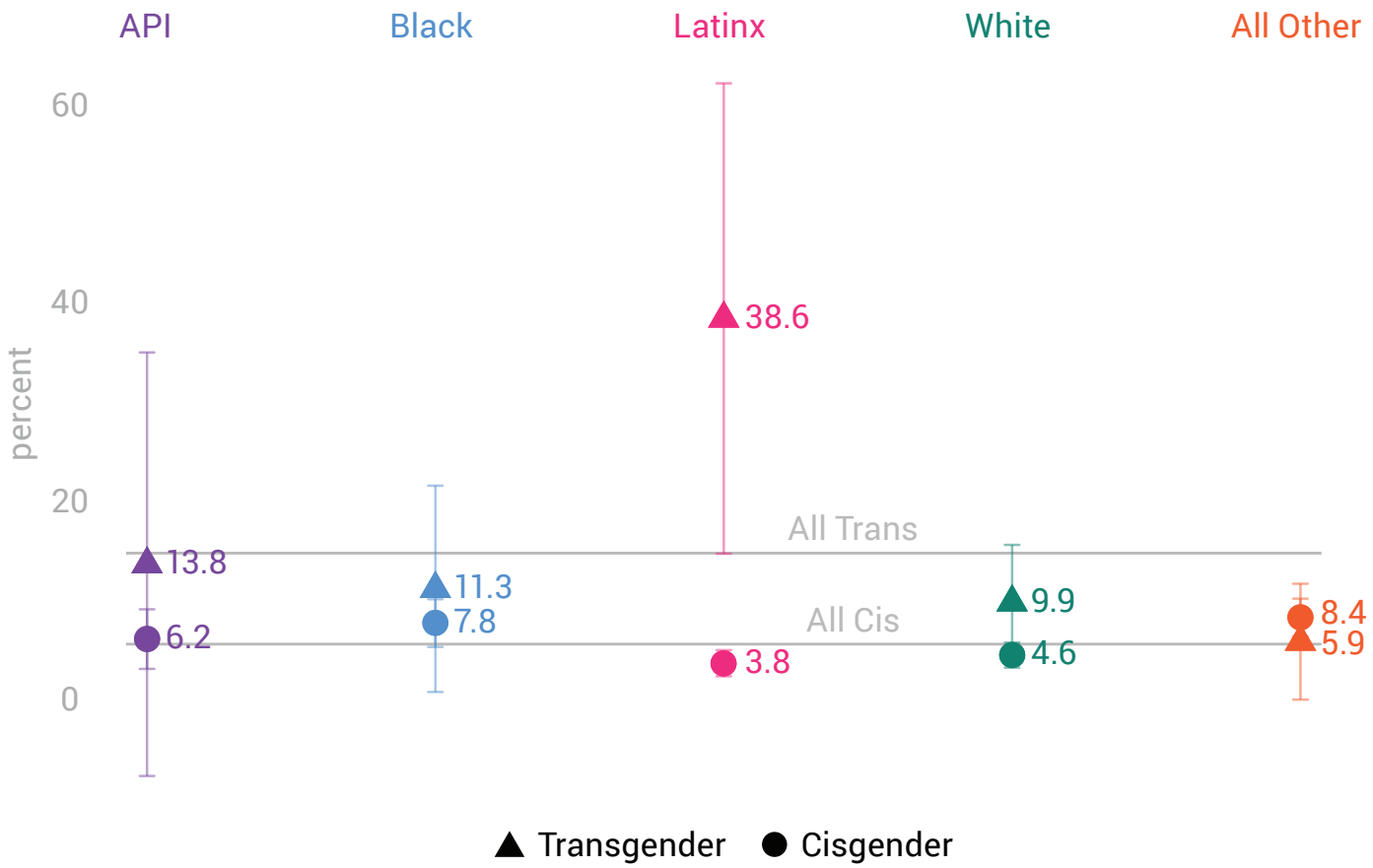
TRANSGENDER STUDENTS OF COLOR DATA

The intersection of race and gender identity predicted rarely or never having worn a seatbelt, riding with someone who had been drinking and

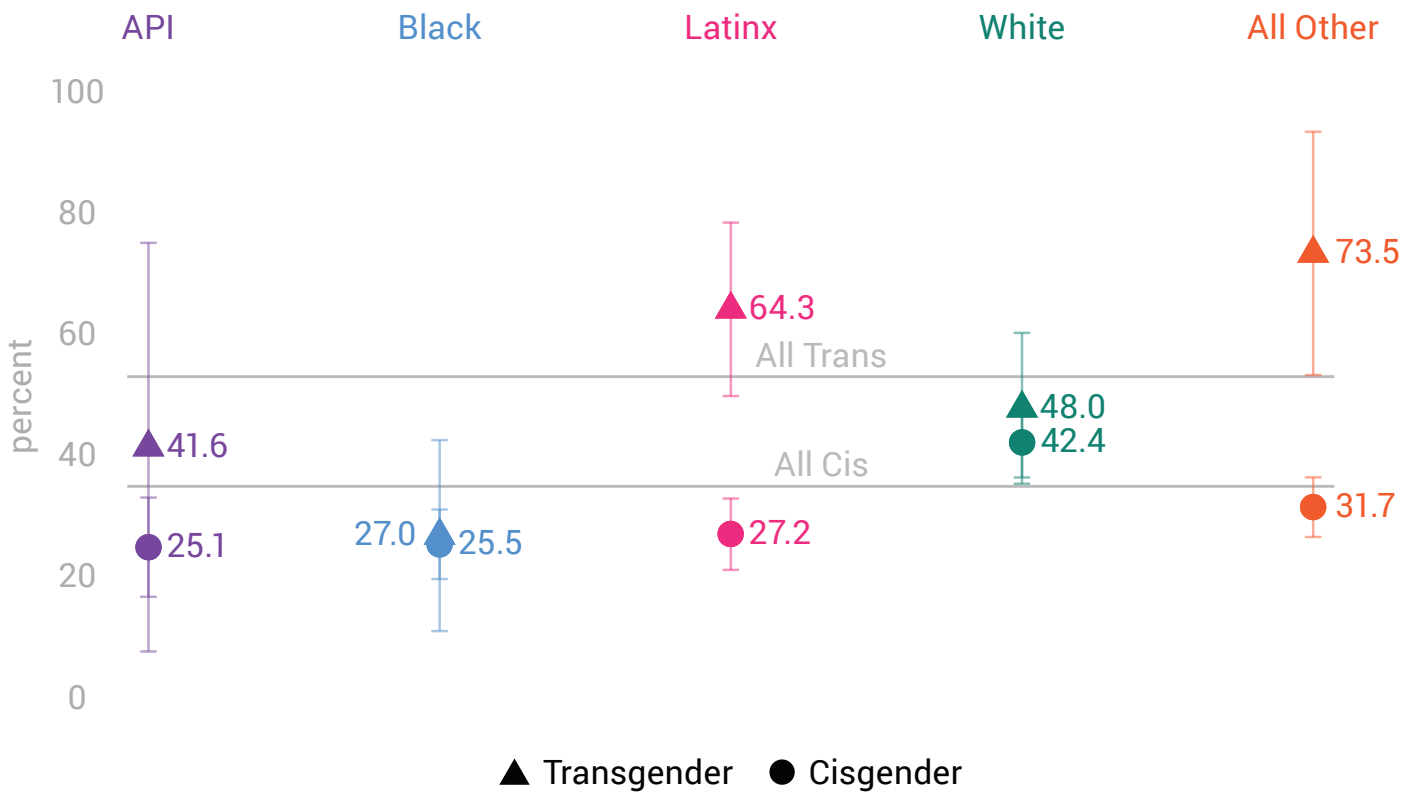
having texted or emailed while driving a car or other vehicle. While the predicted prevalence of rarely or never having worn a seatbelt was 14.9% among transgender students and just 5.7% among cisgender students (please see Data Key for predicted prevalence and other statistics) the largest gap in seatbelt wearing was between Latinx transgender (38.6%) and cisgender (3.8%) students.

The graph on the next page shows the predicted prevalence of having texted or emailed while driving a car or other vehicle among transgender students is 53.2%, while it is just 35.1% for cisgender students; this means that transgender students are 1.5 times as likely as cisgender students to experience this health risk. The transgender students in the "all other" group have the highest prevalence of texting or emailing while driving (73.5%) while, transgender Latinx students are 2.4 times as likely as Latinx cisgender students to report having texted or emailed while driving a car or other vehicle.

PREVALENCE OF RARELY OR NEVER WEARING A SEATBELT



TEXTED OR E-MAILED WHILE DRIVING A CAR OR OTHER VEHICLE



3. Sexual Health

PREVIOUS LITERATURE

There are few studies of adolescent sexual health that examine the differences between cisgender and transgender students (Bungener, Steensma, Cohen-Kettenis & De Vries, 2017). Studies of adult transgender women suggest they have a larger number of sexual partners than cisgender women; however, these studies are focused on HIV and also lack data on transgender men (e.g. Becasen, Denard, Mullins, Higa & Sipe, 2019). Two studies found that transgender students were more likely than were cisgender students to report no condom use during their last sexual intercourse (Eisenberg, Gower, McMorris, Rider, Shea & Coleman, 2017; Johns et al., 2019).

There are studies of sexual experience and sexual risk-taking that examine differences by race and ethnicity among adolescents. Some studies of sexual behavior find that Black young adults, males in particular, start having sex at earlier ages than do white, Latinx or American Indian youth (Cavazos-Rehg et al., 2009; Upchurch, Levy-Storms, Sucoff & Aneshensel, 1998). Others find that API youth are less likely to have had sexual intercourse and to be sexually active than are youth of other races and ethnicities (Kuo & St. Lawrence, 2006; Lowry, Eaton, Brener & Kann, 2011). Studies have shown that Black and/or Hispanic youth (males, in particular) are more likely to report having multiple sexual partners compared to their white counterparts (Carlson, McNulty, Bellair & Watts, 2014; Kann et al., 2018; Rowe, 2002; Santelli, Brener, Lowry, Bhatt & Zabin, 1998).

TRANSGENDER AND CISGENDER DATA

See Sexual Activity Risk Behaviors, page 57

Helping to bridge the gap in the lack of literature exploring sexual health of transgender youth, this report found while transgender students reported higher rates of sexual activity across six of the seven indicators, only three indicators were found to be statistically significantly different. These indicators include ever had sexual intercourse, had sexual intercourse for the first time before age 13 years, and had sexual intercourse with four or more persons during their life. This data also highlighted that 55.3% of cisgender students reported using a condom during their last sexual intercourse while a smaller number (46.4%) of transgender students reported doing so.

RACE AND ETHNICITY DATA

See Sexual Activity Risk Behaviors, page 58

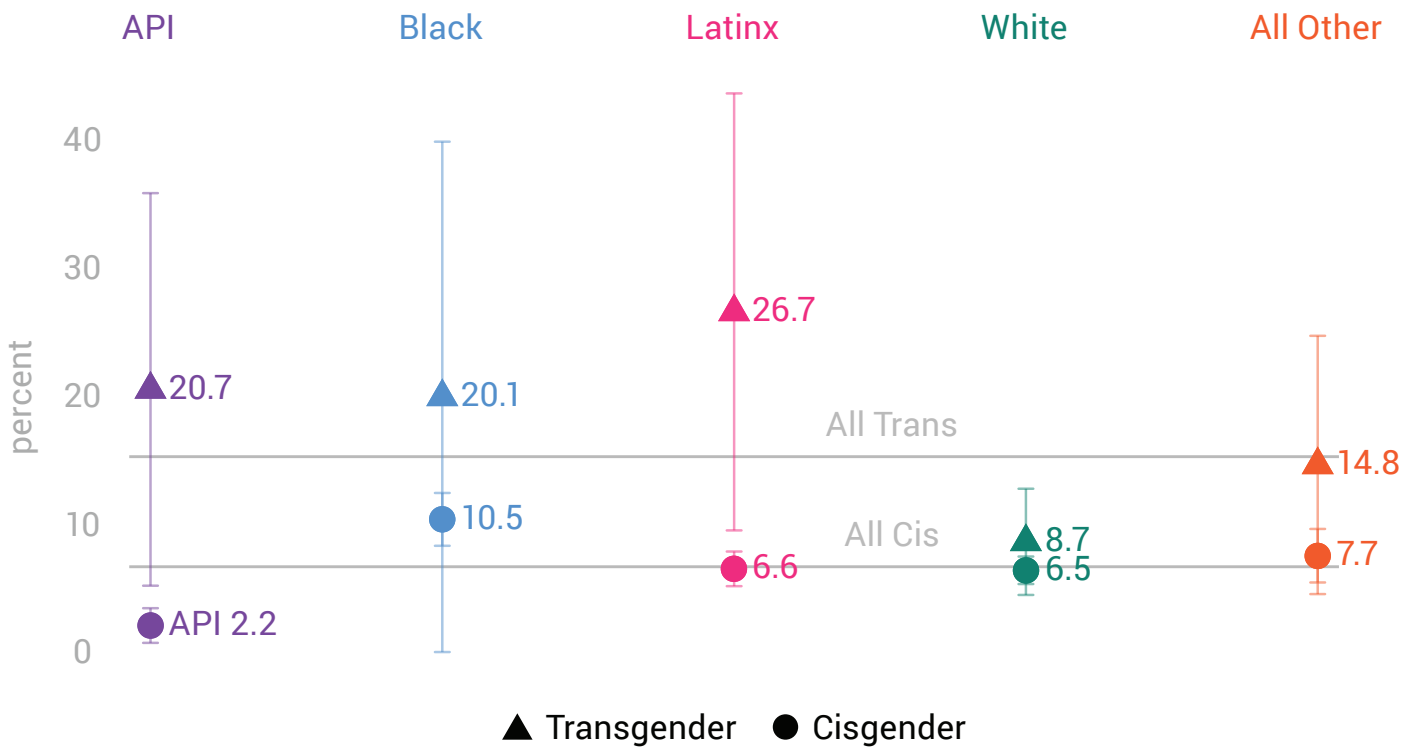
Moreover, as shown in the table in the appendix, five of the seven indicators were found to be statistically significantly different across race; these findings were very consistent with previous literature. Consistent with the literature cited above, this report found that sexual behavior is more common among Black youth than youth of other races. For example, higher percentages of Black youth reported ever having sexual intercourse (38.4%), having sexual intercourse for the first time before age 13 years (6.4%), and having had sexual intercourse with four or more persons during their life (10.6%) than did API, Latinx, and white youth, with differences among the groups being statistically significant. This data also supports the literature cited above regarding the sexual

health of API youth. More specifically, it found that only 12.0% of API youth reported to have ever had sexual intercourse in comparison to nearly one third of white (33.5%), Latinx (36.5%), and Black (38.4%) youth. Less API youth (8.5%) reported to be sexually active, while around one-quarter of Black (25.1%), Latinx (25.7%), and white (25.0%) youth were sexually active.

TRANSGENDER STUDENTS OF COLOR DATA

In this graph, the predicted prevalence of had sexual intercourse with four or more persons during their life among transgender students is 15.4%, while it is just 6.8% for cisgender students (please see Data Key for predicted prevalence and other statistics). This means that transgender youth are 2.3 times as likely as cisgender students to experience this health risk. The largest gap is among API youth, with transgender API students who are 9.3 times as likely as API cisgender students to have had sexual intercourse with four or more persons during their life.

HAD SEXUAL INTERCOURSE WITH FOUR OR MORE PERSONS DURING THEIR LIFE



4. Sexual and Dating Violence and Sexual Assault

PREVIOUS LITERATURE

While comparative research is scant, studies of the prevalence of sexual violence among transgender adults and youth consistently finds high rates of unwanted sexual activity. One study found about 50% of transgender people reported unwanted sexual activity (Stotzer, 2009). The 2015 U.S. Transgender Survey found that 13% of respondents who were out or perceived as transgender while in school experience sexual assault (James, Herman, Rankin, Keisling, Mottet & Anafi, 2016). Similarly, 12% of transgender or gender non-conforming students between grades K-12 reported sexual violence (Grant, Mottet, Tanis, Harrison, Herman & Keisling, 2011). In two studies that compare the prevalence of four types of sexual and dating violence by gender identity, forced sex, dating violence, sexual harassment and/or dating violence was higher among transgender students than cisgender students (Hill & Silva, 2005; Johns et al., 2019).

Studies among adolescents that examine racial and ethnic differences in experiences of sexual violence have shown mixed findings. Some studies comparing these outcomes by race find that Black adolescents have the highest prevalence of having been forced to have sexual intercourse or experience sexual assault (Crouch, Hanson, Saunders, Kilpatrick, & Resnick, 2000; Kann et al., 2018; Raghavan, Bogart, Elliott, Vestal & Schuster, 2004; Rickert, Wiemann, Vaughan & White, 2004; Thompson, McGee & Mays, 2012), other studies have found no such racial and ethnic group differences (Freeman & Temple, 2010; Maxwell, Robinson, & Post, 2003; Muram, Hostetler, Jones & Speck, 1995). Some studies among female students only find that sexual dating violence is more prevalent among white females (Kann et al., 2018, Kann et al., 2016) compared to other racial and ethnic groups, but one found that this is more prevalent among Latinx females (Kann et al., 2014).

TRANSGENDER AND CISGENDER DATA

See Sexual and Dating Violence Risk Behaviors, page 59

In keeping with previous literature comparing sexual and dating violence by gender identity, this report found that transgender students reported forced sex, sexual violence, sexual dating violence and physical dating violence at higher rates than cisgender students. For example, one quarter (25.3%) of transgender youth were ever physically forced to have sexual intercourse in comparison to 7.2% of cisgender youth and more than one-third (35.1%) of transgender youth also reported experiencing sexual violence compared to 9.8% of cisgender students. Similar trends were found for having experienced sexual dating violence and physical dating violence, with higher percentages of transgender youth reporting such experiences.

RACE AND ETHNICITY DATA

See Sexual and Dating Violence Risk Behaviors, page 59

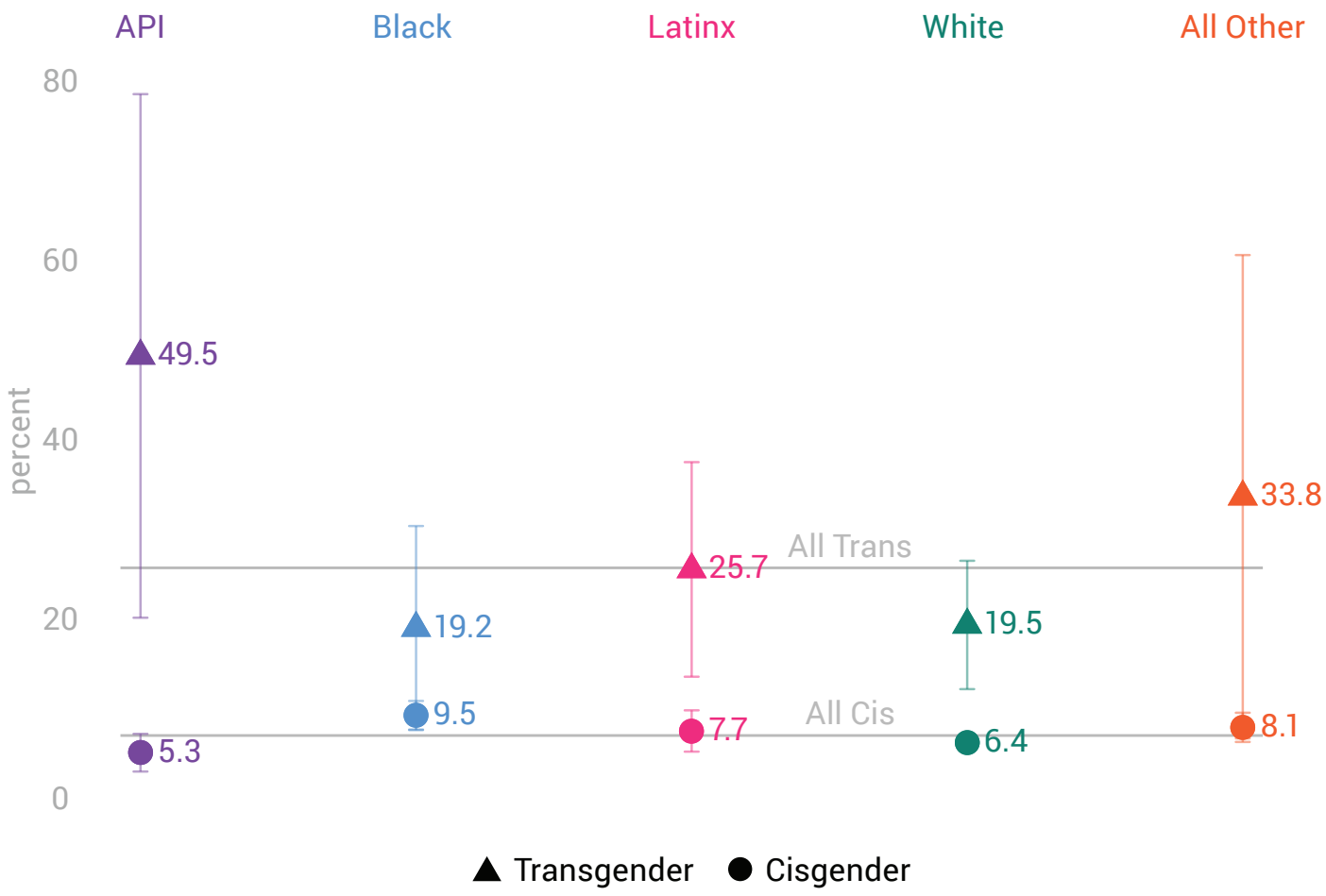
In the 2017 YRBSS data, Black students were more likely than students of other races to have been forced to have sex (9.6%) or to have experienced physical dating violence (11.2%); in contrast, they were least likely of all racial

and ethnic groups in this study to report sexual dating violence (6.8%). API and Latinx students reported higher rates of sexual dating violence (10.6% in both instances) than did students of other races. This suggests a need for further study of sexual and dating violence.

TRANSGENDER STUDENTS OF COLOR DATA

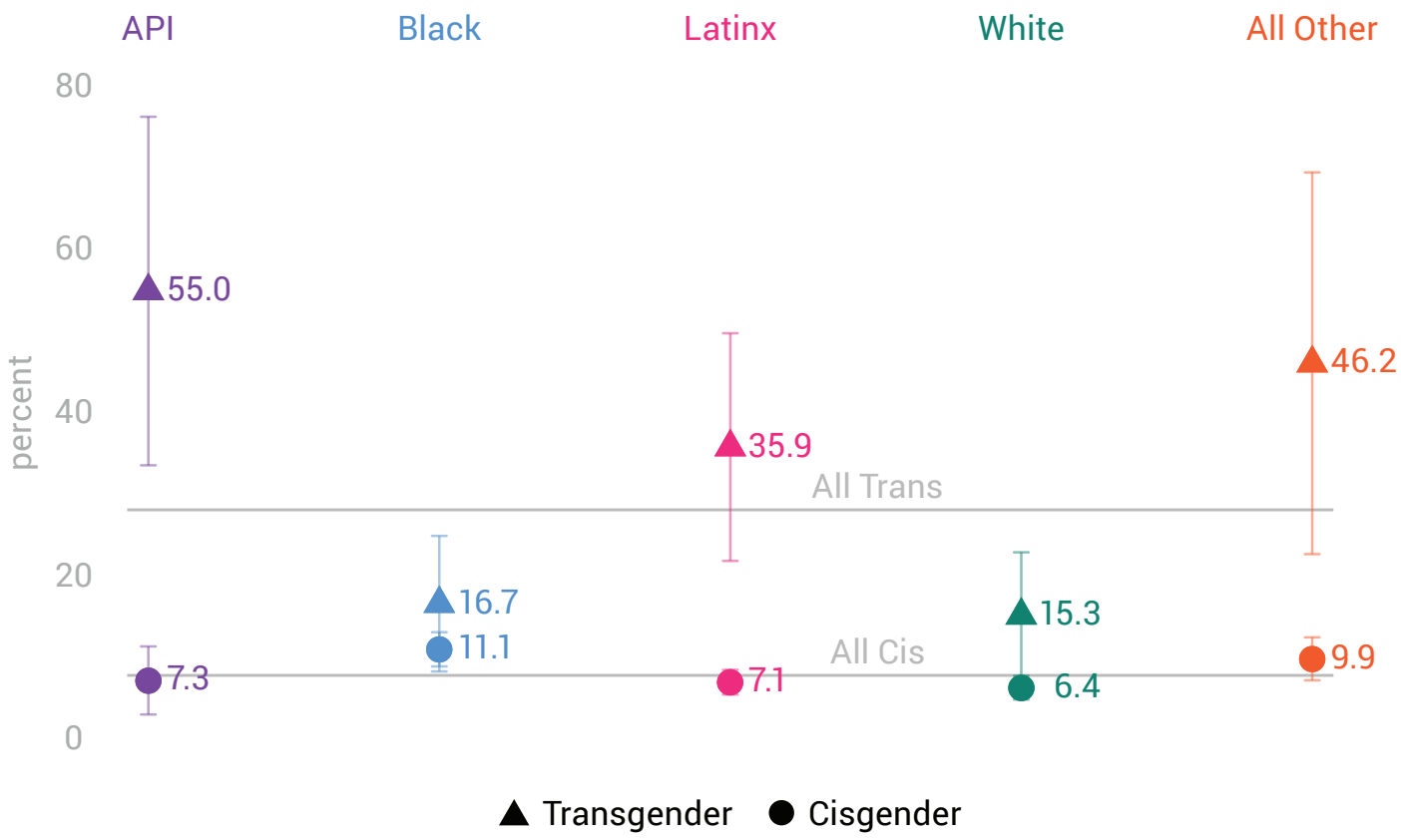
In the graph below, the predicted prevalence of having been forced to have sex among transgender students is 25.9%, while it is just 7.2% for cisgender students (please see Data Key for predicted prevalence and other statistics). This means that transgender youth are 3.6 times as likely as cisgender students to report forced sex. The largest gap between transgender and cisgender students is within API youth. Transgender API students are 9.4 times as likely as API cisgender students to experience having been forced to have sex. Transgender API students also had the highest predicted prevalence of any subgroup analyzed in this report, with nearly half (49.5%) predicted to have experienced forced sex. Patterns were similar for sexual violence and sexual dating violence (data not shown).

PREVALENCE OF HAVING BEEN FORCED TO HAVE SEX



In this graph, the predicted prevalence of experienced physical dating violence among transgender students is 28.2%, while it is just 7.9% for cisgender students; this means that transgender youth are 3.6 times as likely as cisgender students to report this experience. As in the case of forced sex, the largest gap between cisgender and transgender students is found within API students, with transgender API students 7.6 times as likely as API cisgender students to have experienced physical dating violence. Over half (55.0%) of API transgender students are predicted to report physical dating violence.

EXPERIENCED PHYSICAL DATING VIOLENCE



5. Alcohol Use

PREVIOUS LITERATURE

The prevalence of alcohol use is higher among transgender or gender non-conforming youth than cisgender youth (De Pedro, Gilreath, Jackson & Esqueda, 2017; Johns et al., 2019; Reisner, Greytak, Parsons & Ybarra, 2015). Garofalo, Deleon, Osmer, Doll & Harper (2006) found that 65% of ethnic-minority transgender girls and young women aged 16–25 years in their sample report frequent use of alcohol. Wilson et al. (2009) found that 88% of transgender girls and young women aged 15–24 years old in Los Angeles and Chicago in their sample had used alcohol.

Most studies indicate that alcohol use (lifetime, current, daily, and/or binge drinking) is most prevalent American Indian/Native youth compared to white youth, who in turn are more likely to use alcohol than Latinx youth. Black and API youth are least likely to use alcohol, particularly the latter. While Black youth are less likely than white, Latinx and Native youth to drink (Bachman, Johnston & O'Malley, 1981; Bachman, Wallace, O'Malley, Johnston, Kurth & Neighbors, 1991; Epstein, Botvin, Baker, & Diaz, 1998; Johnston, O'Malley, Bachman & Schulenberg, 2011; Johnston, O'Malley, Bachman & Schulenberg, 2012; Kann et al., 2018; Keyes et al., 2015; O'Malley, Johnston & Bachman, 1998; Patrick, Schulenberg, Martz, Maggs, O'Malley & Johnston, 2013; Poulin, 1991; Swendsen et al., 2012; Wallace, Bachman, O'Malley, Schulenberg, Cooper & Johnston, 2003; Windle, 2003; Wu, Woody, Yang, Pan & Blazer, 2011; Zapolski, Pedersen, McCarthy & Smith, 2014) they are more likely to drink than their API counterparts (Bachman et al., 1991; Wallace et al., 2003; Wu et al., 2011). While Goncy & Mrug (2013) found higher rates of alcohol use among Black youth than white youth in early adolescence, no differences were found between the two races in middle and late adolescence, suggesting that this difference may abate over time in favor of the more common finding that white youth use more than Black youth (Wallace et. al., 2003).

TRANSGENDER AND CISGENDER DATA

See Alcohol Use Risk Behaviors, page 60

The data illustrated that risk behavior of alcohol is more prevalent among transgender students on all indicators with the exception of the indicator of having "usually got the alcohol they drank by someone giving it to them." Statistically significant differences overall were found for the indicators: Ever drank alcohol, had their first drink of alcohol before age 13 years, usually got the alcohol they drank by someone giving it to them, reported that the largest number of drinks they had in a row was 10 or more. Consistent with previous findings, a higher proportion of transgender students reported to ever drinking alcohol in comparison to cisgender students (71.0% vs. 59.5%). Transgender students also reported having their first drink before the age of 13 (39.1%), were currently drinking alcohol (31.8%), were currently binge drinking (15.3%), and having ten drinks or more in a row (7.8%) at higher proportions than did cisgender students. However, slightly more than two-fifths (41.5%) of cisgender students reported to usually get the alcohol they drank by someone giving it to them in comparison to slightly less than one-fifth (17.4%) of transgender students.

RACE AND ETHNICITY DATA

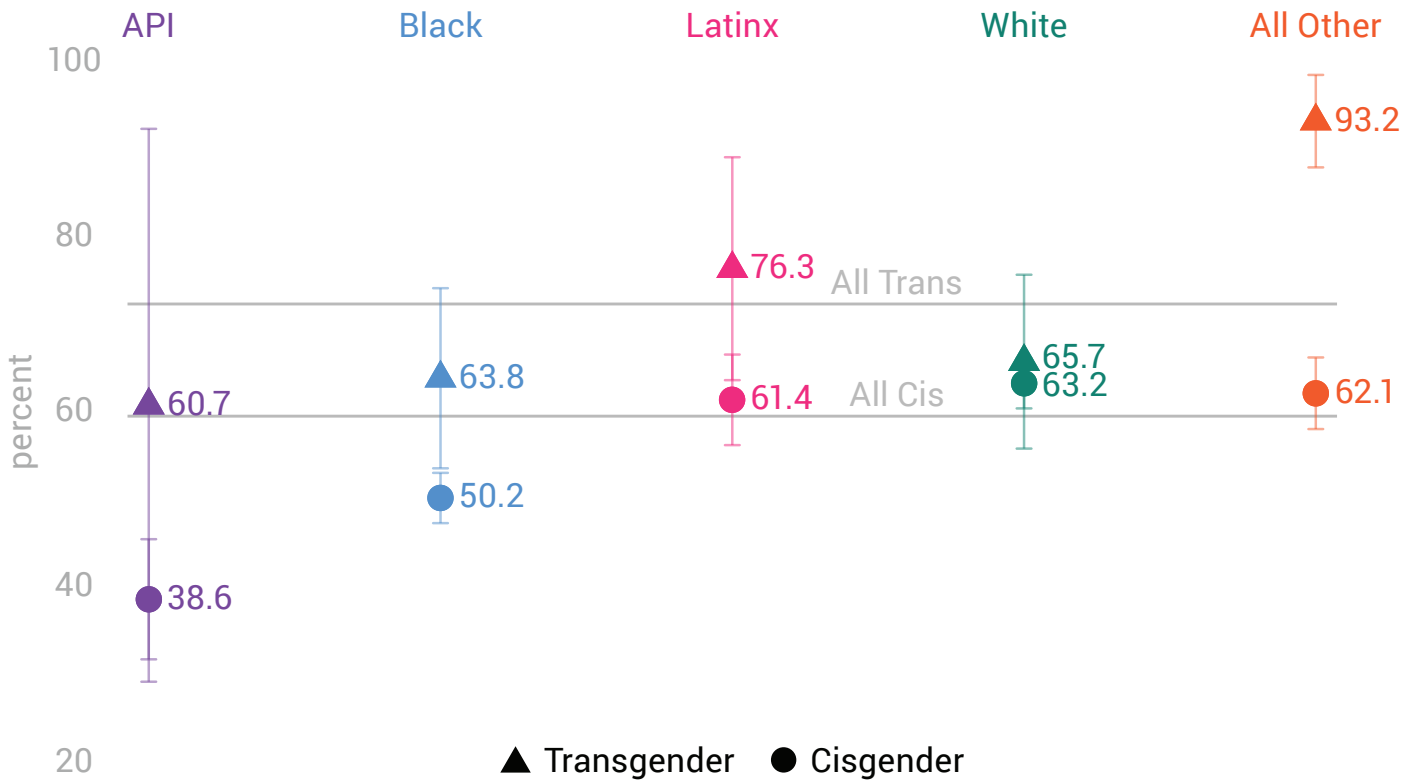
See Alcohol Use Risk Behaviors, page 60

Overall, this report found statistically significant differences across the indicators of "ever drank alcohol, trying alcohol under age 13, currently drank alcohol, and currently were binge drinking." Consistent with the literature review, higher proportions of Latinx, white, and other race students reported to have ever drank alcohol, currently drank alcohol, and currently were binge drinking in comparison to API and Black students. Moreover, similar to other studies, this data also highlight that risky behavior related to alcohol use is more prevalent among Black youth than API youth in four of the six indicators. For example, this report found that a higher proportion of API (6.5%) students reported to be currently binge drinking in comparison to Black (5.8%) students. This finding was statistically significantly different. While the literature has generally found that risky behavior in alcohol use is less prevalent among Black youth than white youth, consistent with the findings of Goncy & Mrug (2013) this report found that 17.3% of Black students have tried alcohol under age 13 in comparison to 14.9% of white students.

TRANSGENDER STUDENTS OF COLOR DATA

In the graph below, the predicted prevalence of having drunk alcohol (ever) among transgender students is 72.3%, while it is just 59.5% for cisgender students (please see Data Key for predicted prevalence and other statistics). This means that transgender students are 1.2 times as likely as cisgender students to experience this health risk. The largest gap is among API youth, transgender API students are 1.6 times as likely as API cisgender students to experience ever drank alcohol. Similar trends were found for having tried alcohol before age 13.

EVER DRANK ALCOHOL



6. Tobacco Use

PREVIOUS LITERATURE

Tobacco use has received more attention in the gender identity disparities literature compared to many other health outcomes. Studies conducted are consistent in their findings that transgender youth and young adults are more likely to smoke than their cisgender counterparts (Buchting, Emory, Kim, Fagan, Vera & Emery, 2017; Day et al., 2017; De Pedro et al., 2017; Hinds, Loukas & Perry, 2018; Johnson, O'Brien, Coleman,Tessman, Hoffman & Delahanty, 2019); Rath, Villanti, Rubenstein & Vallone, 2013; Truth Initiative, 2018; Wheldon, Watson, Fish & Gamarel, 2019). Studies have also found that transgender adults reported higher lifetime use and/or past 30–day use of e-cigarettes than cisgender adults (Buchting et al., 2017; Wheldon & Wiseman, 2019). Recent data from studies comparing tobacco smoking by race and ethnicity among adolescents find that white and Latinx youth are more likely to smoke than Black and API youth (Ellickson, Orlando, Tucker & Klein, 2004; Epstein, Botvin & Diaz, 1998; Evans-Polce, Vasilenko & Lanza, 2015; Everett & Warren, 2001; Griesler & Kandel, 1998 cited in Kandel, Kiros, Schaffran, & Hu, 2004; Kann et al., 2018; Johnston, O'Malley & Bachman, 2002; Nelson, Giovino, Shopland, Mowery, Mills & Eriksen, 1995; Nelson et al., 2008; SAMHSA, 2010; Wang et al., 2019). While not all studies examining the prevalence of tobacco use by race and ethnicity include comparisons of American Indian/Alaska Native groups to groups of other races and ethnicities, those that do consistently find that this group has higher lifetime smoking and current smoking prevalence compared to other groups (Odani, Armour & Agaku, 2018; Wallace, et al. 2003; Rudatsikira, Muula & Siziya, 2009; S, 2014). Prevalence of ever having used electronic cigarettes and/or current use of electronic cigarette was highest among Hispanic and white youth in comparison to Black and Asian youth (Odani et al., 2018).

TRANSGENDER AND CISGENDER DATA

See Tobacco Use Risk Behaviors, page 61

In keeping with the literature on tobacco use and gender identity, data from this report show that a higher proportion of transgender students have tried cigarettes, initiated smoking early (before age 13), currently smoke and smoke heavily compared to cisgender students. They also are more likely to have ever used or to currently vape and to get their supplies from a store (suggesting that these stores are readily selling to underage transgender smokers). They are also more likely to use smokeless tobacco and cigars but are no more likely to have tried to quit than cisgender students. Moreover, consistent with the literature, this report found that a higher proportion of transgender (27.1%) students reported to currently using an electronic vapor product than did cisgender (16.4%) students.

RACE AND ETHNICITY DATA

See Tobacco Use Risk Behaviors, page 62

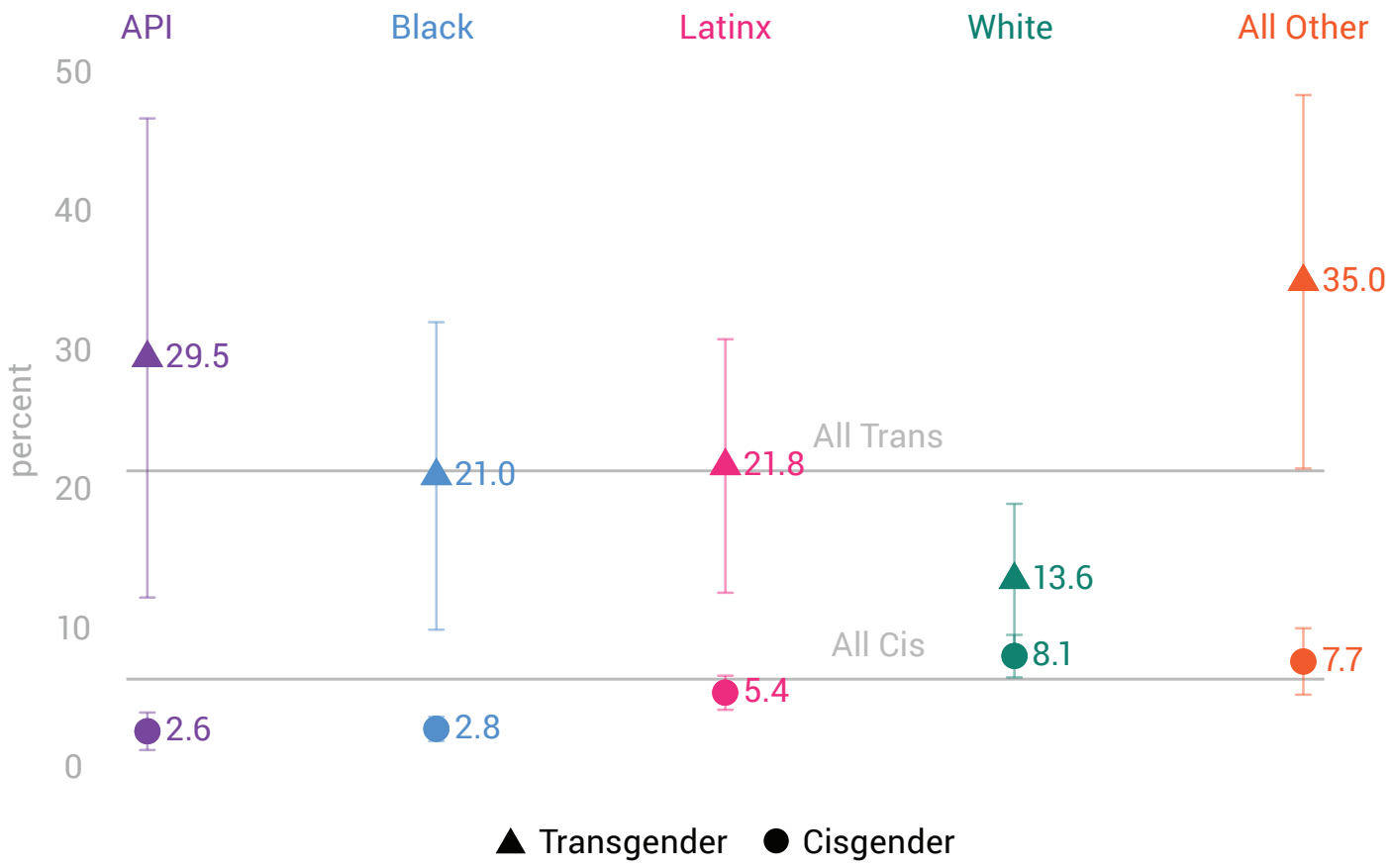
When examining differences in smoking behavior across racial groups, statistically significant differences were found in seven of the 10 indicators measured in the YRBSS. For example, nearly one-quarter of both white (24.9%) and Latinx (24.9%) youth reported ever

having smoked cigarettes in comparison to API (12.0%) and Black (16.8%) youth. Similar to Ellickson et al. (2004), but different from many other, more recent studies, this report found that higher proportions of Black (9.9%) and Latinx (8.3%) youth had early smoking initiation than white youth (6.9%). Moreover, consistent with previous findings, this report found that higher percentages of white youth (8.1%) reported currently smoking cigarettes followed by Latinx (5.5%), Black (3.1%), and API (2.9%) youth. This report also supports previous literature regarding lifetime and current use of electronic vapor products, in that higher percentages of white and Latinx students reported ever used an electronic vapor product and currently used an electronic vapor product than Black students.

TRANSGENDER STUDENTS OF COLOR DATA

The predicted prevalence of current cigarette smoking among transgender students is 21.4%, while it is just 6.4% for cisgender students (please see Data Key for predicted prevalence and other statistics). This means that transgender students are 3.3 times as likely as cisgender students to experience this health risk. The largest gap is among API youth, with transgender API students 11.2 times as likely as cisgender students to report current cigarette smoking. The gap within Black students is also very large (21.0% vs. 2.8%), with transgender Black students 7.5 times as likely as cisgender Black students to report current cigarette smoking. Similar trends were found for having ever smoked and for smoking before age 13.

PREVALENCE OF CURRENT CIGARETTE SMOKING



7. Marijuana Use

PREVIOUS LITERATURE

Marijuana is the most widely used illicit drug among adolescents (CBHSQ, 2016; Johnston, O'Malley, Miech, Bachman & Schulenberg, 2016; Swendsen et al., 2012). Studies have found elevated odds of marijuana use among transgender youth compared to cisgender youth (Reisner et al., 2015b; De Pedro et al., 2017). Racial and ethnic disparities are found in the prevalence of current and lifetime use of marijuana and of early first use; however, these disparities are changing over time.

A study using data from Monitoring the Future from 2006–2015 to examine trends over time in past 30-day marijuana use between 2006 and 2015, found that while white students had significantly higher use of marijuana than Black and Hispanic students in 2006, marijuana use increased among 10th and 12th grade Black students and 12th grade Hispanic students during the decade (Keyes, Wall, Feng, Cerdá & Hasin, 2017).

Further, data from the 2017 and 2015 YRBSS found that Black adolescents had the highest prevalence of use across all racial and ethnic groups studied (Kann et al., 2016; Kann et al., 2018). Another study, using data from 2013, found the prevalence of current marijuana use for Black individuals was significantly higher than that of white individuals (Johnson et al., 2015). Previously, however, studies found higher rates of use in Latinx and white youth (SAMHSA, 2002 cited in Shih, Miles, Tucker, Zhou & D'Amico, 2010).

TRANSGENDER AND CISGENDER DATA

See Marijuana Use Risk Behaviors, page 63

Consistent with the literature cited above, the data from this report illustrate the high prevalence of marijuana use among transgender students in comparison to their cisgender counterparts, with statistically significant differences found across all three indicators. For example, while nearly half (49.4%) of all transgender students reported ever using marijuana, this was true for less than two-fifths (37.1%) of cisgender students.

RACE AND ETHNICITY DATA

See Marijuana Use Risk Behaviors, page 63

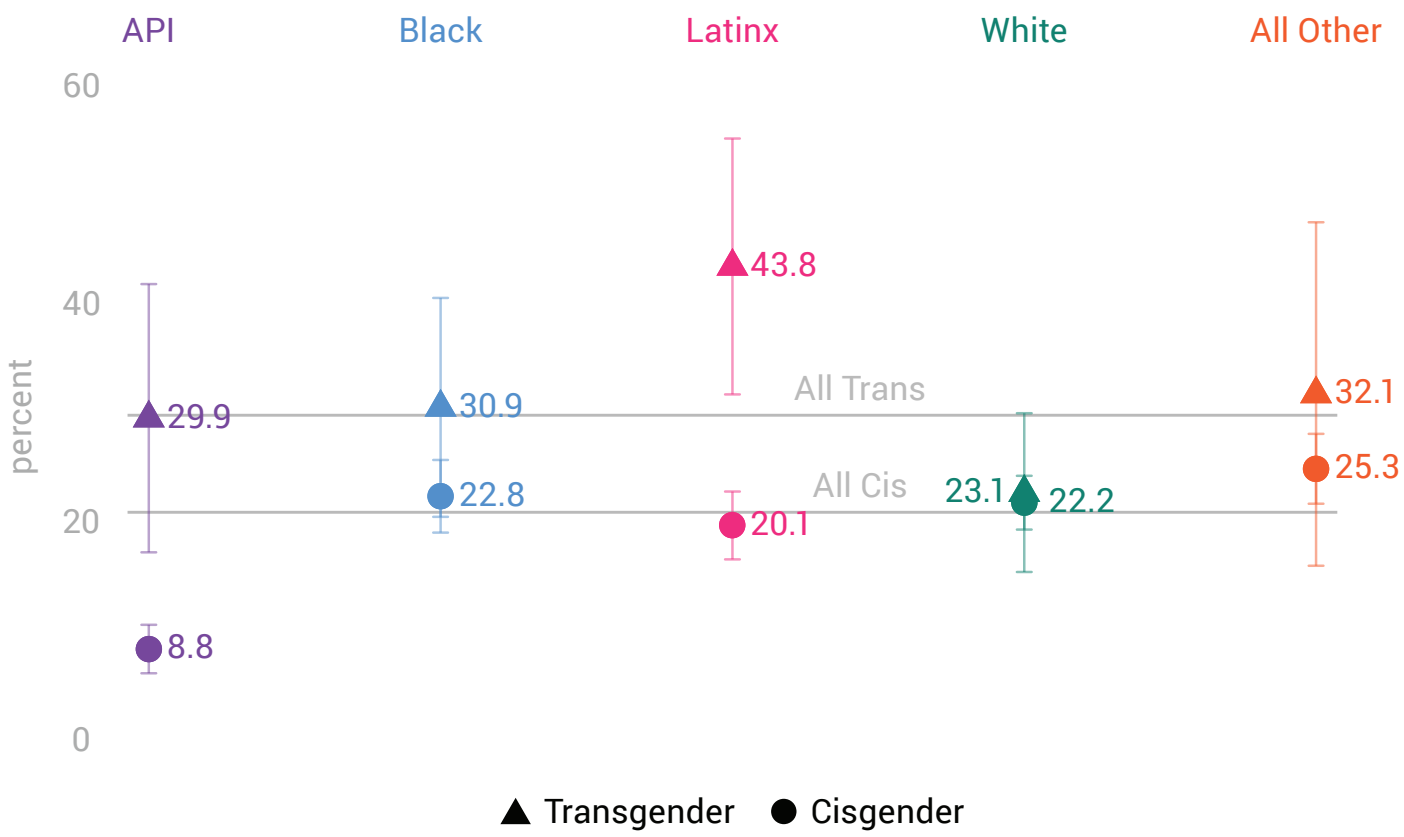
Furthermore, all three indicators were found to have statistically significant differences by race. This report has highlighted the narrowing gap and overall change in the prevalence of marijuana use among Black, white, and Latinx youth. More specifically, a greater percentage of Black youth (41.2%) have ever used marijuana than Latinx (38.6%) and white (36.6%) youth. Similar to the findings of Kann et al. (2018), this report also highlighted that the prevalence of having ever used marijuana (41.2% vs. 36.6%), of having tried marijuana for the first time before 13 years old (9.6% vs. 5.2%), and of current marijuana use (22.9% vs. 22.2%) was higher among Black youth than white youth.

TRANSGENDER STUDENTS OF COLOR DATA

The predicted prevalence of currently using marijuana among all transgender students is 30.2%, while it is just 21.3% for cisgender

students (please see Data Key for predicted prevalence and other statistics). This means that transgender students are 1.4 times as likely as cisgender students to experience this health risk. The largest gap, however, is among API youth, where transgender API students are 3.4 times as likely as API cisgender students to experience currently using marijuana. Similar trends were seen for having ever used marijuana and for trying marijuana under age 13.

CURRENTLY USED MARIJUANA



8. Other Illicit Drug Use

PREVIOUS LITERATURE

While population-based research remains rare, a small number of students have found that transgender youth are more likely to use illicit drugs than are cisgender youth (Day, et al. 2017; De Pedro et al., 2017). Although racial and ethnic disparities are different across different substances, the overall prevalence of illicit drug use is higher among Latinx and white youth than Black youth (Johnston et al., 2012, Swensden et al., 2012; Wallace, Bachman, O'Malley, Johnston, Schulenberg & Cooper, 2002), while API youth have been found to have the lowest prevalence (Bachman et al.,1991; Harachi, Cagtalan, Kim & Choi, 2001).

TRANSGENDER AND CISGENDER DATA

See Other Drug Use Risk Behaviors, page 64

Consistent with the literature cited above, the data from this report illustrate that a higher percentage of transgender students engaged in illicit drug use than cisgender students across all eleven indicators. For example, 50.1% of transgender students reported to use any illegal drugs other than pot in comparison to 16.6% of cisgender students. While nearly one-fifth (18.5%) of transgender students reported ever injecting any illegal drug, this was true for only 1.7% of their cisgender counterparts. On all indicators, the differences between the groups were statistically significant.

RACE AND ETHNICITY DATA

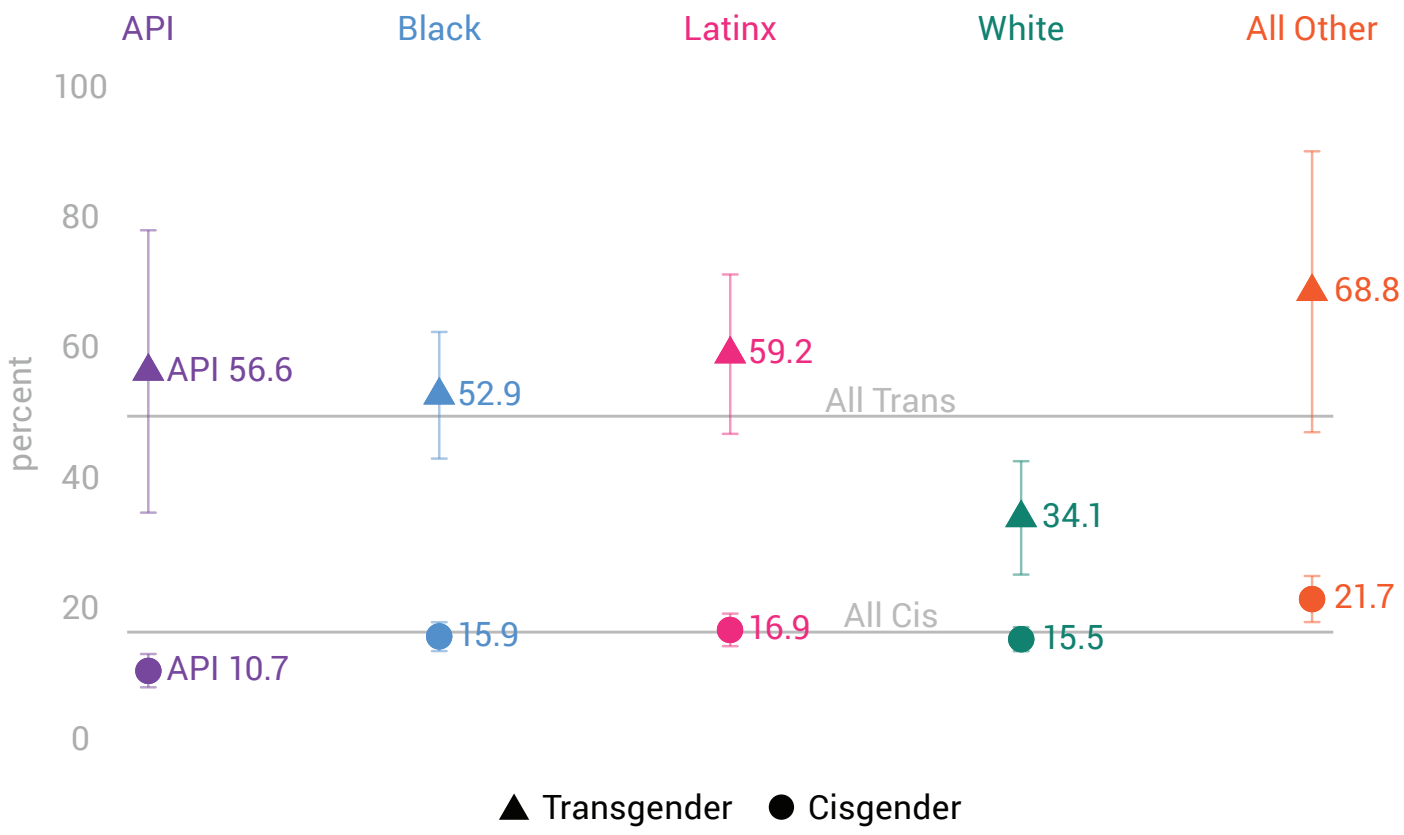
See Other Drug Use Risk Behaviors, page 65

Examination of the data by race highlights that there are racial differences in the usage of different substances. Statistically significant differences by race and ethnicity were found in eight of the 11 indicators , including ever having taken illegal drugs, ever used cocaine, ever used inhalants, ever used heroin, ever used methamphetamines, ever used ecstasy, ever took prescription pain medicine without a doctor's prescription or differently than how a doctor told them to use it, and were offered, sold, or given an illegal drug on school property. Following the literature, this report found a lower percentage of API youth (11.2%) reported to ever having used any illegal drugs other than pot in comparison to white (15.7%), Black (16.6%), and Latinx (17.3%) youth. Lower percentages of API youth reported using any drugs (11.2%). This report illustrates that racial and ethnic disparities differ by substance.

TRANSGENDER STUDENTS OF COLOR DATA

In the graph below, the predicted prevalence of ever having taken illegal drugs among transgender students is 49.7%, while it is just 16.6% for cisgender students (please see Data Key for predicted prevalence and other statistics). This means that transgender youth are 3.0 times as likely as cisgender students to experience this health risk. The largest gap is among API youth; transgender API students are 5.3 times as likely as API cisgender students to experience ever having taken illegal drugs.

EVER HAVING TAKEN ILLLEGAL DRUGS



9. Food, Weight and Physical Activity

PREVIOUS LITERATURE

The food, weight and physical activity sections of the YRBSS include information on dietary practices (e.g. fruit and vegetable consumption, green salad consumption), self-described weight and self-reported weight loss behaviors, physical activity indicators (including participation in physical education and sports, as well as experience of concussion in sports and daily activity patterns (being physically active, watching television and playing video games). Like many outcome measured on the YRBSS, the social determinants of diet and exercise are very complex, with many mediating factors affecting the associations between race/ethnicity and food, weight and physical activity. Unlike many indicators included in the survey (such as use of drugs and alcohol, or risky driving behavior), food, weight and physical activity indicators are also complex because both too much and too little of each can be a danger to young adults. For example, young adults who consume too few calories are at risk of malnutrition, while those who consume too many may experience complications from obesity. Young adults who exercise too much can injure themselves, while those who exercise too little may have poor cardiovascular health. This section will not only describe what is known about transgender people and about race/ethnicity and food, weight and physical activity, but also address issues that relate to the social determinants of these and related behaviors.

While food, weight and physical activity are comparatively understudied among transgender people and no literature exists using population based data to compare cisgender and transgender students' behaviors in these areas, the evidence that exist suggests that transgender students may have health risks related to food insecurity, both under and over-eating and perhaps for low physical activity rates as well. For example, one study finds that transgender college studentsare more likely to be an unhealthy weight, whether that is underweight or obsess and are less likely to meet guidelines for physical activity and screen time (VanKim, Erickson, Eisenberg, Lust, Rosser & Laska, 2014). Another recent study found that college-age transgender people have poorer dietary intake, more food insecurity and poorer body image than cisgender people (Kirby & Linde, 2020), with the latter finding supported by earlier studies showing high levels of disordered eating and body dissatisfaction (Jones, Haycraft, Murjan & Arcelus, 2016) and inaccurate perceptions of weight and size more prevalent among transgender young people (Murray, 2017). Individuals who are dissatisfied with their bodies are more likely to engage in higher levels of unhealthy eating behaviors (e.g. binge eating) and less likely to engage in healthy behaviors (physical activity and fruit and vegetable consumption) (Harringer 2012). There is very little research on transgender adults or adolescents' physical activity practices; studies that do exist find that transgender adults' are less likely than cisgender adults to be active (Jones, Haycraft, Boyman and Arcelus, 2018).

The prevalence of whole fruit and/or

vegetable consumption is lowest among Black youth than white, Hispanic, and Asian youth (Beech, Rice, Myers, Johnson & Nicklas, 1999; Herrick, Rossen, Nielsen, Branum & Ogden, 2015; Lowry, Wechsler, Galuska, Fulton & Kann, 2002). While white youth are more likely to consume breakfast regularly than were youth of other races (Bruening, Larson, Story, Neumark-Sztainer, & Hannan, 2011; Timlin, Pereira, Story & Neumark-Sztainer, 2008) Black adolescents and young adults are less likely to eat breakfast than white youth (Merten, Williams & Shriver, 2009) and Latinx adolescents less infrequently eat breakfast in comparison to white, API, and Black adolescents (Bruening et al., 2011).

Some studies find white and to a lesser extent Latinx and API people, especially girls, are at greater risk for dysmorphia and disordered eating than black (Croll et al., 2002; Mayville, Katz, Gipson & Cabral, 1999; Neumark-Sztainer & Hannan, 2000; Neumark-Sztainer, Croll, Story, Hannan, French & Perry, 2002); however, body size and body ideals moderate this effect (Gluck & Geliebter, 2002) and more recent studies show mixed findings (Epperson et al., 2014). Black youth are at more risk for obesity (White, Kohlmaier, Varnado-Sullivan & Williamson, 2003) and to a lesser extent, Latinx youth are as well (Huh, Stice, Shaw & Boutelle, 2012; Ogden & Carroll, 2010).

While the prevalence of being physically active at least 60 minutes per day on five or more days was highest among white compared to Black and Latinx youth, physical inactivity was more prevalent among Black than white and Latinx youth (Eaton et al., 2010a; Eaton et al., 2012; Kann et al., 2014; Kann et al., 2016; Kann et al., 2018).

Nutrition behaviors are affected by the accessibility of healthy foods, and many studies have shown that distance to supermarkets, living in food deserts and food affordability all affect eating patterns (see review in ODPHP Healthy People 2020). Further, youth of color are more likely to live in areas where healthy food is inaccessible, and their families are more likely to have little discretionary income to spend on food (Baker, Schootman, Barnidge & Kelly, 2006; Block, Scribner & DeSalvo, 2004; Galvez et al., 2008; Gordon, Purciel-Hill, Ghai, Kaufman, Graham & Van Wye, 2011, Hilmers, A, Hilmers, D. C., & Dave, 2012; Lewis et al., 2005; Morland, Wing & Roux, 2002; Morland & Filomena, 2007; Treuhaft & Karpyn, 2010). Poverty is also associated with malnutrition and being overweight and obese (Drewnowski & Specter, 2004; Levine, 2011; Tanumihardjo et al., 2007; WHO, 2016). Similarly, youth of color are less likely to live in neighborhoods with good access to recreation facilitaties and safe, appealing options for physical fitness, meaning that they are less likely to be physically active and more likely to be overweight or obese (Sallis & Glanz, 2009).

TRANSGENDER AND CISGENDER DATA

See Dietary Risk Behaviors, page 66

This report supports findings on the dietary intake of transgender youth, with statistically significant differences found for not drinking fruit juice, not eating fruit, not eating other vegetables, and not eating breakfast. However, higher percentages of cisgender youth (49.4%) reported not eating carrots than did transgender youth (30.7%).

When addressing the physical activity health category, this report adds to the little existing

research regarding transgender youth and how physically active they are. For example, more than half (54.5%) of transgender youth attended physical education (PE) classes on 1 or more days in comparison to a little less than half (47.6%) of cisgender youth, albeit not statistically significantly different.

Overall, two of the three indicators for physical activity (played on at least one sports team and had a concussion from playing a sport or being physically active) were found to be statistically significantly different. In analysis of daily activity patterns, this report has found distinctions in physical activity and screen time present among transgender and cisgender students. More specifically, a lower percentage of transgender youth than cisgender youth reported to be physically active at least 60 minutes per day on 5 or more days (24.5% vs. 46.9%), watched television 3 or more hours per day (13.3% vs. 19.8%), and played video or computer games or used a computer 3 or more hours per day (39.8% vs. 43.9%). Statistically significant differences were found for the first two indicators specified.

RACE AND ETHNICITY DATA

See Dietary Risk Behaviors, page 67

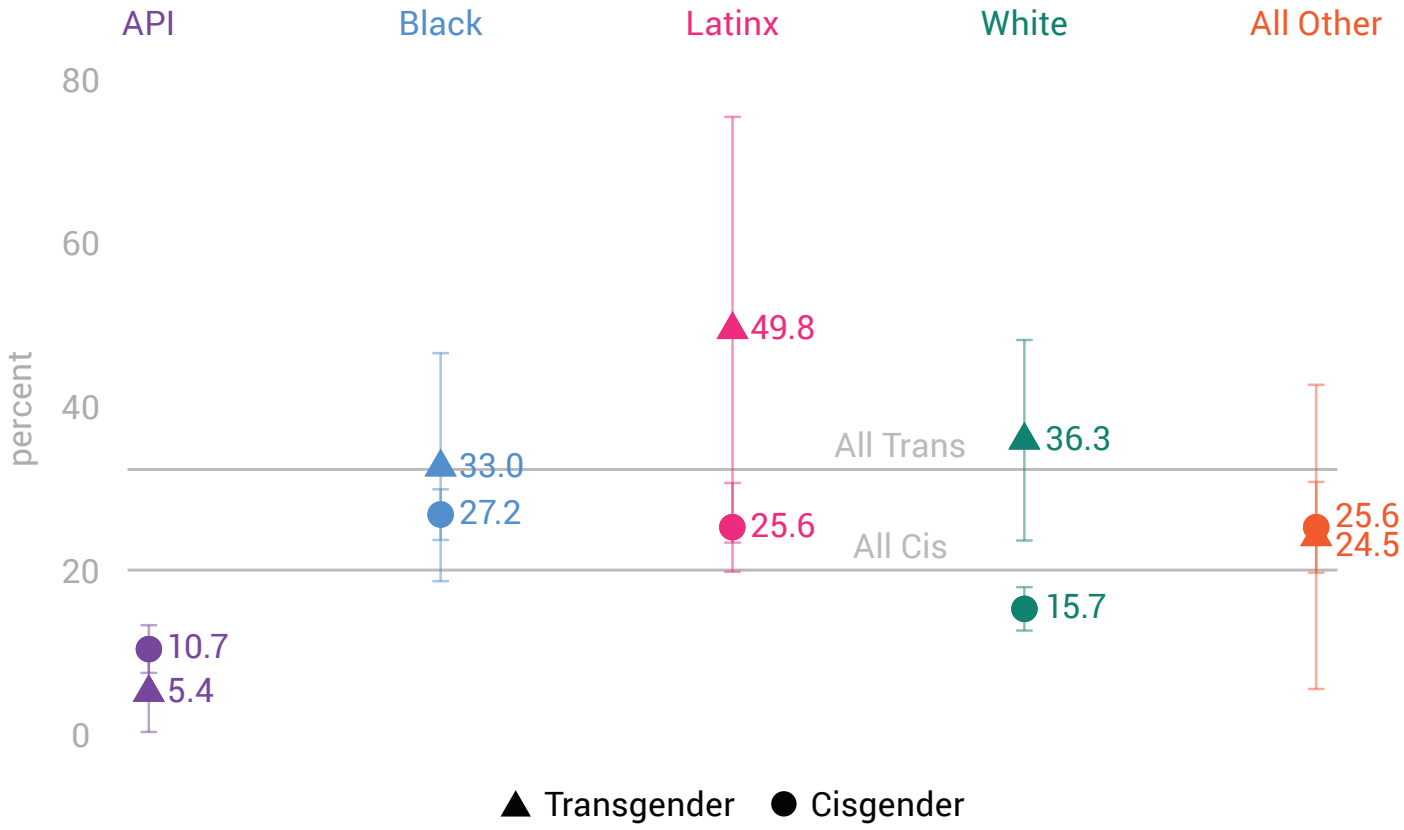
Examination of the data regarding food, weight, and physical activity across racial groups in this report supports that of the literature. As illustrated in the table in the appendix, higher percentages of Black youth reported to not consume whole fruit and/or vegetables, with statistically significant differences found across each of the indicators. In particular, while slightly more than one-fifth (21.4%) of Black youth did not eat fruit this was true for less than one-eighth of API (11.0%), Latinx (10.3%), and white (8.6%) youth. Also, consistent with the literature cited above, higher percentages of Black (16.4%) and Latinx (16.2%) youth reported not eating breakfast in comparison to API (14.3%) and white (12.1%) youth.

Although statistically significant differences were found for both indicators on weight, the data from this report contrasts with that of the literature on the risk of body dysmorphia for white youth. More specifically, in contrast with the literature, this report found that a higher percentage of Latinx (38.7%) followed by Black (28.5%) youth described themselves as slightly or very overweight in comparison to white (27.6%) and API (26.9%) youth. Consistent with the literature on physical activity, this report found that higher percentages of white youth (50.3%) reported to be physically active at least 60 minutes per day on 5 or more days compared to Black youth (37.5%). This difference was statistically significant.

TRANSGENDER STUDENTS OF COLOR DATA

In the graph on the next page, the predicted prevalence of not having eaten vegetables among transgender students is 32.7%, while it is just 20.4% for cisgender students (please see Data Key for predicted prevalence and other statistics). This means that transgender students are 1.6 times as likely as cisgender students to report not eating vegetables. The largest gap is among white youth, where transgender white students are 2.3 times as likely as white cisgender students to say they did not eat vegetables.

DID NOT EAT OTHER VEGETABLES



10. Other Health and Well-Being

PREVIOUS LITERATURE

The YRBSS asks a number of individual questions that are not nested into sections with related topics. These include human immunodeficiency virus (HIV) testing, seeing a dentist, asthma, sleep and grades. With the exception of HIV testing, these health behaviors are rarely studied in examinations of gender identity disparities.

The gender identity and racial and ethnic predictors of other types of behaviors vary widely, with the most widely studied gender identity disparities being related to HIV (rather than the other four indicators: dentist use; asthma; sleep; and grades on the YRBSS). Transgender women and transgender men who have sex with cisgender men are at high risk of HIV and are less likely to get tested for HIV than other high-risk groups such as gay and bisexual cisgender men (Pitasi, Oraka, Clark, Town & DiNenno, 2017). While little research has explored the prevalence of HIV testing in transgender and cisgender youth, Johns et al. (2019) found that the prevalence of never been tested for HIV was higher among cisgender male (87.4%) and female (86.9%) youth than transgender youth (70.0%).

Studies find that in comparison to other races, the prevalence of having been tested for HIV is highest among Black students (McCree, Jones & O'Leary, 2010; Van Handel, Kann, Olsen & Dietz, 2016).

Previous studies of the YRBSS find that the prevalence of having seen a dentist is higher among white students than Black and Latinx students and that Black students are most likely to be told they have asthma, followed by white and Hispanic students (Kann et al., 2014; Kann et al., 2016; Kann et al., 2018). The prevalence of getting 8 or more hours of sleep is highest among white students, followed by Hispanic then Black students (Eaton, McKnight-Eily, Lowry, Perry, Presley-Cantrell & Croft, 2010; Kann et al., 2014; Kann et al., 2016).

TRANSGENDER AND CISGENDER DATA

See Other Health & Well-Being, page 69

Consistent with previous findings, this report found that more than one-quarter (29.0%) of transgender students were ever tested for HIV in comparison to 11.5% of cisgender students. While there was no literature found on these topics, it is interesting to note that more cisgender students than transgender students said they saw a dentist (72.1% vs. 51.4%), and said they got mostly As or Bs (72.0% vs. 62.5%). No significant differences were found in rates of asthma or in getting 8 hours of sleep.

RACE AND ETHNICITY DATA

See Other Health & Well-Being, page 69

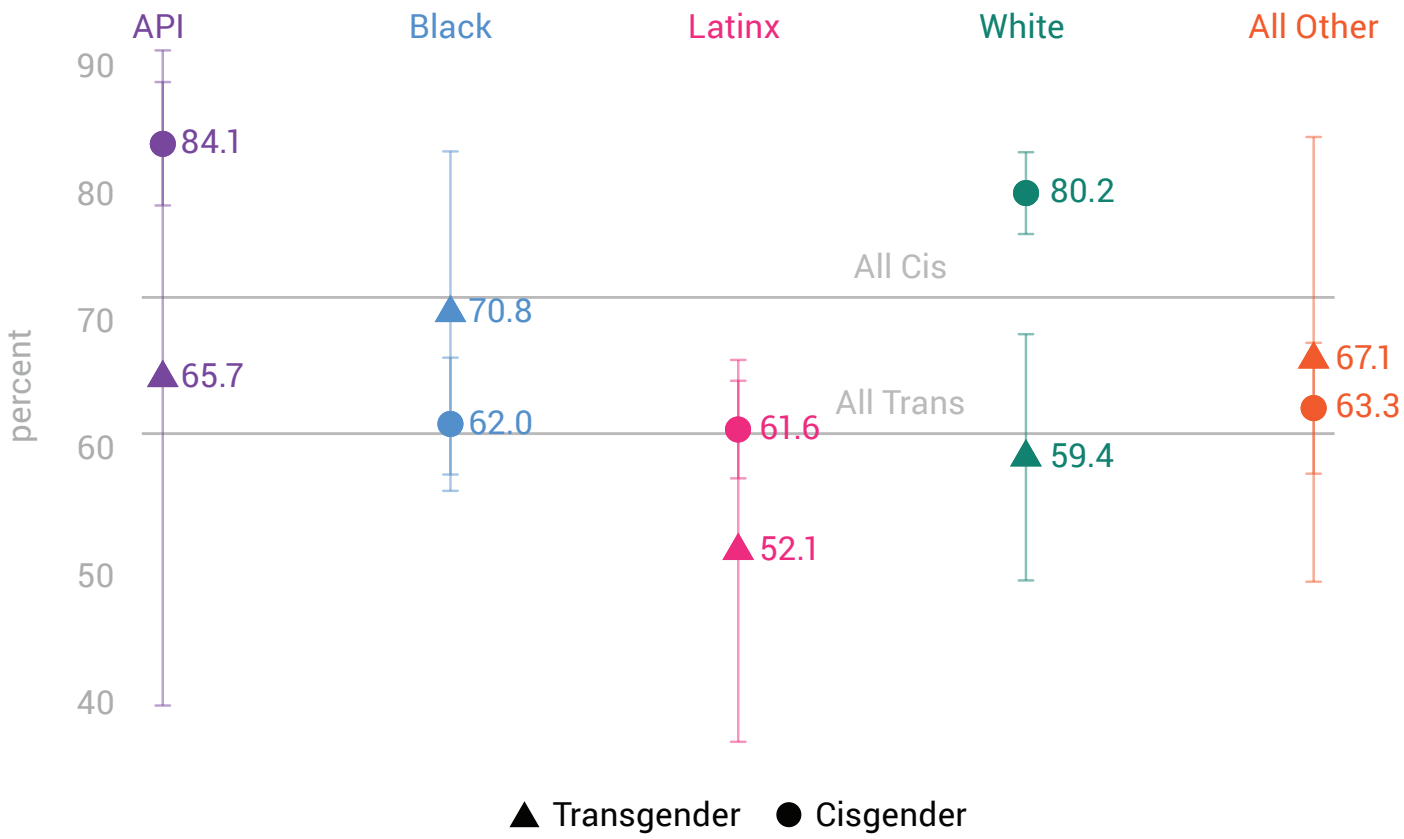
This report supports previous findings of being tested for HIV by race in that a higher percentage of Black (18.0%) students reported to have been tested for HIV than all other races. Consistent with previous findings from the three most recent YRBSS cycles (2011, 2013, and 2015 cited above, as Kann et al., 2014; Kann et al., 2016; Kann et al., 2018) this report found that a higher percentage of white (81.7%) students reported to have seen a dentist in comparison to Black (65.6%) and Latinx (64.9%) students and a higher percentage of Black (28.3%) students reported having been told by a doctor or nurse that they had asthma than were white (24.6%) and Latinx (21.7%) students.

This report found that while a lower percentage of Black (19.6%) students reported getting 8 or more hours of sleep, in contrast to the literature a higher percentage of Latinx (28.0%) students reported doing so in comparison to white (25.0%) students.

TRANSGENDER STUDENTS OF COLOR DATA

In the graph below, the predicted prevalence of gets mostly As or Bs among transgender students is 61.3%, while it is 72.0% for cisgender students (please see Data Key for predicted prevalence and other statistics). This means that transgender youth are 0.9 times as likely as cisgender students to get these grades. This does not hold among Black youth or All Other youth; transgender Black students are 1.1 times as likely as Black cisgender students to say they get mostly As and Bs.

GETS MOSTLY As OR Bs



WEAPONS, SCHOOL SAFETY AND BULLYING

While literature suggests that transgender students are more likely to experience bullying and feelings of unsafety, no *intersectional* differences were found among these indicators. We have elected not to show these findings in this report precisely because they are well-documented elsewhere and our findings do not add further to this literature (e.g. Bochenek & Brown, 2001; D'Augelli, Pilkington & Hershberger, 2002; Human Rights Campaign, 2012; Johns et al., 2019; Kosciw, Greytak & Diaz, 2009; Kosciw, Greytak, Zongrone, Clark & Truong, 2018; McGuire, Anderson, Toomey & Russell, 2010; Toomey, Ryan, Diaz, Card & Russell, 2013).

Discussion: The Intersections of Transgender Status, Race & Ethnicity

This report builds on recent research that suggests that transgender students are more likely to experience victimization, to use alcohol, tobacco and other drugs, to be at risk for suicide and to engage in sexual risk taking (Johns, et. al., 2019). It introduces an intersectional analysis with race and ethnicity and shows that transgender students of color, especially those who are API or Latinx, experience not only gender identity disparities and racial disparities in health risk and outcomes, but also experience intersectional disparities that are the product of being both transgender and a person of color. Given what is already known about racism and transphobia, it seems unnecessary to document further that transgender students of color experience additional stress as a result of prejudicial and hateful treatment by others. Further, minority stress theory suggests that these additional stressful experiences—rather than anything inherent about these students—explain the large disparities in health risks and outcomes experienced by transgender students of color.

One unexpected pattern in these findings is that Latinx and API students are often the groups with the largest differences between cisgender and transgender students. Although it is crucial not to conflate or minimize the differences between Latinx and API

communities in discussing these patterns, one thing that Latinx and API students have in common is that they are members of communities with large numbers of immigrants. Immigrants of color have been particular targets of negative policies, hatred and violence; if it is the experience of being an immigrant (rather than the experience of being Latinx or API per se) that is intersecting with transgender status to produce these large health disparities, both research and interventions should focus on working with immigrant communities and immigrant transgender students to address these disparities.

A second question raised by this report is why intersections between race/ethnicity and gender identity do not seem to be associated with outcomes related to bullying and victimization; disparities in bullying and victimization are some of the most well-established in the scientific literature on LGBTQ+ health. While studies of this kind cannot prove that an association does not exist, interesting questions are raised by the fact that no evidence was found to support it. If transgender students are more likely to experience bullying and victimization regardless of their racial and ethnic identities, this is something that should be alleviated for all of them as well.

In order to alleviate these disparities, however, it is crucial to ask further questions about why the particular stress faced by transgender students of color creates additional risk, even when race/ethnicity alone and gender identity alone are taken into account, and how we can transform their environments to be healthier and build their resilience to stressors they experience. The YRBSS is designed to measure health risks and outcomes among the general population and specific subpopulations; it is not intended to help researchers uncover the mechanisms that drive these changes; however, it is precisely these mechanisms that are crucial to narrowing the intersectional disparities found in this report.

While the recommendations section below suggests structural changes that can improve the health and well-being of transgender students of color, there are also interpersonal relationships and skills that can protect them while the stressors they experience from structures inequality change around them.

For example, there are numerous examples of studies that show that social support, school connectedness and positive role models can mitigate the increased risk of suicide among LGBTQ+ students; perhaps focusing on increasing these protective factors and the existing resilience of transgender students of color will help them avoid intersectional stressors and cope in positive ways with ones that they do experience. While this research has not been replicated with transgender students of color, positive youth development principles would suggest that offering additional support to transgender students of color will help mitigate harm. Similarly, there are unique strengths and areas of resilience among API and Latinx communities and among transgender students of color; building upon these strengths can also help prevent experiences of minority stress from being internalized by transgender students of color and interrupt the pathway between negative experiences and poor health outcomes.

CONCLUSIONS, LIMITATIONS & RECOMMENDATIONS

The 22 sites that measured transgender status in 2017 have allowed the authors to generate a large population-based combined dataset. These data provide valuable health information about transgender students, students of color, and those at the intersections. This combined dataset demonstrates that there is an interaction effect between transgender status, race, and ethnicity and the health risk and outcomes measured by the YRBSS. This report also illustrates the importance of measuring transgender status alone as a predictor of health risk behaviors and outcomes among adolescent students, independent of other demographic variables. The analysis offered in this report compliments the CDC's MMWR report on transgender victimization.

Our analysis also shows that many of these associations between transgender status, race, and ethnicity do not necessarily follow expected patterns that we would anticipate as identified in available literature. These differences suggest that while most transgender students of color may be at greater risk for some behaviors, in other cases the interaction effect between transgender status, race, and ethnicity actually serve as protective factors to health risk. Finally, the dataset shows that a student's transgender status predicts health risk behaviors among transgender students of color as well as white students; there is a particularly large gap in the literature related to students of color and transgender status that needs further research.

Limitations

Recognizing the need for broader public health research into risk behaviors and outcomes associated with transgender status, researchers developed a series of best practices for asking questions to identify transgender and other gender minority respondents on population-based surveys (The GenIUSS Group 2014). The CDC recommended transgender status question used on the 2017 YRBSS incorporated the GenIUSS' single-item approach. This approach allows a respondent to assess their internal self-perceptions about gender. It was incorporated given that the 2017 YRBSS demographics section did not ask a two-step gender question. The two-step gender question includes a question about a respondents assigned sex at birth, and then a separate question asking about their gender identity.

Rather, the 2017 YRBSS has a recommended question asking all students, "What is your sex?," followed with only two options: femaleor male. Only 19 sites[3] ask an optional, single-item question recommended

3 Note that two additional states, California and New Mexico, and one additional district, Oakland, CA, ask a different version of the CDC's recommended transgender status question.

by the CDC about whether they do or do not identify as transgender. Only those students that select "Yes, I am transgender" are counted as transgender students—all other responses considered students to be cisgender. The current single-item approach limits researchers from knowing if these transgender students identify as transgender girls, transgender boys, nonbinary, Two-Spirit, or agender students. Each of these different ways of being transgender comes with different health risk and needs that will set them up for academic success.

Furthermore, limitations with asking students about their race and ethnicity erase important nuances and needs for students who are biracial or multiracial. One of the core recommendations of this paper urges CDC administrators to consider reviewing some of the evidence-based shifts to collecting demographic data that more accurately reflects a student's multiple and intersecting social identities as they relate to gender identity, race and ethnicity. For the purposes of this report, we use the terms the CDC has approved for the 2017 YRBSS survey in order to connect different audiences with the data we are presenting.

Stakeholder Recommendations

Key stakeholder groups are encouraged to consider the following recommendations, ordered from foundational, intermediate, and advanced changes, that stakeholders can make depending on their role within each discipline listed below. The analysis of the YRBSS race, ethnicity, and transgender status questions informed these recommendations with the goal of reducing the health risk behaviors and improving health outcomes for transgender students of color.

FOR EDUCATORS: DEVELOP INCLUSIVE EDUCATIONAL PROGRAMS. Educators are encouraged to consider the multiple and intersecting social identities of transgender students of color by designing culturally responsive interventions and programs that include discussions of intersectionality. These stakeholders can take the following actions:

- **Foundational**. Share this report with your colleagues and organize a learning opportunity, such as viewing an Advocates for Youth webinar on the topic, to learn more about how to reduce health risk and improve outcomes for transgender students of color.

- **Intermediate**. Equip school medical personnel and Title IX coordinators with knowledge about the health disparities that disproportionately affect youth of color in their schools and the intersectional disparities for transgender youth. Offer skills that will help these professionals support these students to navigate culturally specific factors that might affect their experiences of sharing their transgender status, whether those are challenges such as experiences of pressure to conform to gender roles or the challenges of navigating pressure to

be a "model minority" young person, or assets such as the strong social support found in some communities of immigrants. Engage transgender students of color on your School Health Advisory Council (SHAC) to provide guidance on school health programming and its impact on student health and learning.

- **Advanced.** Review existing intervention programs designed for all students, including the Whole School, Whole Community, Whole Child (WSCC) model, STEM programs designed for students of color, and other interventions, with an eye to making sure they include culturally specific material that will meet the academic, cultural, and social needs of transgender students of color to reduce health risk behaviors and improve outcomes.

FOR POLICYMAKERS: INCREASE ACCESS TO EDUCATION FOR TRANSGENDER IMMIGRANT STUDENTS. Policymakers are encouraged to work with subject matter experts, including students of color, to identify policy and legal barriers for transgender students of color experiencing the health risk behaviors and outcomes described in this report. These stakeholders can take the following actions:

- **Foundational**. Locate LGBTQ+ affirming health care in communities of color, staffing health clinics and schools with people who represent the gender, racial, and ethnic diversity of local communities. Work in coalition to identify community-based, culturally specific ways to alleviate intersectional disparities, for example, by addressing other drivers of poor health such as poverty and inequality.

- **Intermediate.** Address underlying issues that may drive intersectional disparities, such as the lack of opportunity for immigrant students of color, barriers that may be confounded for those who are also transgender. For example, consider including issues of gender diversity in classes for English to Speakers of Other Languages (ESOL). Work with the legal system to help transgender people caught in immigration courts or detention to stay safe and to assure that transgender people can seek asylum if they are persecuted in their countries of origin.

- **Advanced.** Ensure that culturally appropriate and effective mental health resources are available to transgender students of color and their families. A more robust safety net of culturally responsive mental health services can help reduce the impacts of racism, transphobia, and xenophobia experienced by transgender students of color.

FOR RESEARCHERS: INCLUDE GENDER IDENTITY QUESTIONS ON POPULATION-BASED SURVEYS. The transgender status question recommended by the CDC is a suitable one to begin examining the total universe of transgender students in the YRBSS, and it should be used on YRBSS surveys at the state and district levels with the

recognition that there are evolving methods to improve this question. These stakeholders can take the following actions:

- **Foundational**. Examine intersectional disparities in health research and conduct qualitative research with young people experiencing intersections of racism and transphobia about how their identities relate to their experiences of health in order to create specialized recommendations about how to help transgender students of color survive, thrive, and advocate to close the gaps found in this research.

- **Intermediate.** Examine outcome-specific mediating and moderating factors that explain in greater detail how experiences of intersectional oppression result in health disparities. The YRBSS does not include measures of these important factors. For example, does immigration status explain the differences found within API and Latinx communities, or does it interact with the experiences of API and Latinx culture and communities? Does social support or community connections reduce disparities?

- **Advanced.** Explore how intersectionality can be associated with resilience and creativity as well as with health risks. The YRBSS measures very few positive outcomes—by definition, it is a survey of risks. Other surveys conducted by researchers interested in intersectionality can decide to include these important questions on surveys they conduct.

FOR ADVOCATES: BUILD INTERSECTIONAL COALITIONS TO REDUCE HEALTH RISK & IMPROVE OUTCOMES. Advocates are encouraged to disseminate findings from this report to help strengthen and build intersectional coalitions that include the needs of students of color in transgender education coalitions, and conversely include the needs of transgender students in education coalitions focused on students of color.

- **Foundational.** Share this report with existing community coalitions focused on health and education for students of color and transgender students and consider organizing a learning opportunity to discuss the importance of building culturally responsive learning environments for transgender students of color.

- **Intermediate.** Educate policymakers, school officials, and other advocates about the importance of understanding how social identities intersect to form experiences of health so that when they make policies, they can attend to closing disparities experienced by multiple and intersecting social identities like race, ethnicity, and transgender status.

- **Advanced.** Provide coalition leadership opportunities for transgender students of color and offer mentorship opportunities within these coalitions to develop the leadership capabilities of this population.

Recommendations for Future Research

This report represents only an initial foray into the scope and depth of population surveillance research a transgender status survey item makes possible. Each of the various categories of health risk behaviors in the YRBSS requires a more in-depth analysis of the different patterns of association between gender identity, race, and ethnicity, with a closer look at differences in association between cisgender and transgender students, as well as differences among transgender students themselves (i.e., those that are transgender girls, transgender boys, Two-Spirit, nonbinary, agender, etc.).

The field would also benefit from a more detailed analysis of how different factors, such as the lack of community support, gender role policing, etc., are associated with higher polyvictimization rates for transgender students of color. Further quantitative and qualitative research is also needed to understand how and why race and gender identity interact to produce health risk disparities. There is almost no research focusing specifically on API youth, and yet these findings suggest that some of the most profound gender identity differences are in this group. The MMWR briefs on the YRBSS do not include API youth in their racial and ethnic comparison, and this should change. Examining interactions with immigration, documentation status specifically and access to public education with a lens on different gender identities would add tremendous value for education leaders, teachers and policymakers alike.

Given that this report offers one of the first analyses of gender identity data collected through a population-based survey, further research is needed to understand how cultural bias affects youth responses and whether there is a significant impact on results for any health risk behaviors, such as those relating to sexual risk. Finally, the YRBSS transgender status question is not fully able to identify the specific needs of transgender students, which means additional research is needed to identify suitable survey measures to assess health risk behaviors among this population.

APPENDICES

Appendix I: Glossary of Terms

The following terms are used throughout this report.

CDC is an acronym referring to the Centers for Disease Control and Prevention, a federal agency that administers the Youth Risk Behavior Surveillance System.

CISGENDER people are those whose gender identity is congruent with their biological sex. It is a term that is the opposite of being a transgender person. Some transgender people may be nonbinary, but not all cisgender people are nonbinary.

CULTURALLY RESPONSIVE refers to the ability to maintain an interpersonal stance that is other-oriented (or open to the other) in relation to aspects of cultural identity that are most important to the person. This concept differs from the term "cultural competency" because it focuses on self-responsiveness and empathy rather than striving to achieve a state of expertise on a culture that is not your own.

GENDER EXPRESSION is the external presentation of an individual's gender-related attributes, which may include aspects such as dress, voice, activities, appearance, and mannerisms. It is distinct from gender identity, which refers to an individual's internal sense of gender. All people, regardless of their sexual orientation or gender identity, have a gender expression.

GENDER IDENTITY relates to a person's internal view of their gender. It describes one's innermost sense of being male, female, or another gender, which may or may not align with the person's body or assigned sex at birth.

GENDER IDENTITY DISPARITIES are the health disparities experienced by gender minorities, including transgender and nonbinary people, as well as stigma, discrimination, and lack of access to quality care. Some health disparities include increased risk of sexually transmitted infections for transgender women of color and a lower likelihood of preventive cancer screening in transgender men.

GENDER HISTORY describes information related to a transgender or nonbinary person's sex, name and pronouns assigned at birth, as well as aspects of their past social, legal and/or medical transitions.

GENDER MINORITY youth are those whose gender identities differ from the majority of the surrounding society. The term is primarily used to refer to transgender,

nonbinary and nonconforming individuals. In this report, youth who selected "transgender" are referred to as gender minority youth.

HEALTH RISK BEHAVIORS as described in this report refer to variables measured through the Youth Risk Behavior Surveillance System. Note that some of these variables may refer to health outcomes or even protective factors rather than risk behaviors.

INTERSECTIONALITY describes how transgender students living at the intersections of marginalized identities, which may include race, gender expression, immigration status, ability, etc. and the systems meant to serve them—schools, healthcare, child welfare and immigration—often fail to account for their specific circumstances, which can increase gender identity disparities.

OUTCOMES are the results of identities or behaviors that happen temporally before the outcome itself. For example, in an analysis of race and mental health, depression might be treated as an "outcome" predicted by race (as well as many other factors). While cross-sectional data like those collected in the YRBSS cannot be used to show change over time, for the purposes of this report, this is what we mean when referencing this term.

POPULATION BASED DATA are data collected using sampling procedures that allow for analyses and statistical inferences that can be generalized to a population. In this report, population-based data have been obtained through the Youth Risk Behavior Surveillance System, which collects data among secondary school-age students.

PREDICTORS are the factors that are associated with outcomes that come temporally prior to them. For example, people typically understand themselves as having a gender or race before they participate in health behaviors or outcomes.

SEX ASSIGNED AT BIRTH is a phrase used to intentionally recognize a person's assigned sex often based on the body. Most commonly people are assigned female or male at birth, though a small number of infants are born with intersex condition.

SITES refers to state and local education and health agencies who receive cooperative agreement funding from the CDC to conduct their own YRBSS surveys.

SOCIAL DETERMINANTS OF HEALTH are the structural and cultural factors that affect an individual's ability to achieve health and wellness; structural inequalities in access to income and education, racism, sexism, homophobia, transphobia and lack of adequate public policy are examples of social determinants of health that cause disparities in a wide variety of health risks and outcomes.

STRUCTURAL RACISM is the formalization of a set of institutional, historical, cultural, and interpersonal practices within a society that more often than not puts one social or ethnic group in a better position to succeed and at the same time disadvantages other groups in a consistent and constant matter that disparities develop between the groups over a period of time.

TRANSGENDER PEOPLE are those whose gender identity is not fully congruent with their assigned sex at birth. Some transgender people may be nonbinary, but not all transgender people are nonbinary.

TRANSPHOBIA encompasses a range of negative attitudes, feelings or actions toward transgender or transsexual people or transsexuality in general. Transphobia can include fear, aversion, hatred, violence, anger, or discomfort felt or expressed towards people who do not conform to social gender expectations.

XENOPHOBIA is fear, hatred, or bias against people from other countries.

YRBSS is an acronym referring to the Youth Risk Behavior Surveillance System, a federal population-based survey that collects data on health risk behavior among students.

Appendix II: YRBSS Background

Youth whose gender identity is not fully congruent with their assigned sex at birth are often referred to as transgender young people. Frequently recognized as a spectrum rather than a binary construct, some transgender youth also identify as nonbinary, agender, or gender nonconforming. While some transgender youth identify in this manner, not all transgender youth do. This also holds true for cisgender youth, or young people whose gender identity is congruent with their biological sex. Cisgender is a term opposite of the term transgender.

Historically, population-based surveys have failed to recognize transgender people. For example, most population-based surveys collect gender identity by only asking a respondent, "What is your sex?," with binary options; 1) female, or 2) male. When responding to this kind of question, transgender people and their gender history are assumed to be congruent with their sex assigned at birth. Questions constructed in this manner make it difficult to fully understand the experiences of transgender people and their specific needs. More recently, inclusive survey designs are making it possible to measure the experience of transgender individuals, revealing disparate health risk behaviors and outcomes compared to cisgender individuals.

With few exceptions, however, federal population-based surveys have not had the capacity to differentiate transgender people or identify correlative health risk behaviors and outcomes from cisgender people. History was made in 2017, when the Youth Risk Behavior Surveillance System (YRBSS), administered by the Centers for Disease Control and Prevention

How was transgender identity measured on the 2017 YRBSS*?

The question wording recommended by the CDC for use in the 2017 YRBSS and used in this report reads:

> Some people describe themselves as transgender when their sex at birth does not match the way they think or feel about their gender. Are you transgender?
>
> A. No, I am not transgender
> B. Yes, I am transgender
> C. I am not sure if I am transgender
> D. I do not know what this question is asking

*NOTE: We use the phrase "cisgender" to describe those who did not affirmatively answer that they are transgender, but rather selected response "A", "C," or "D."

(CDC), was the first federal population-based survey to approve an appropriate survey question to allow assessment of a student's transgender status, thereby allowing analysis of transgender students (see sidebar). The YRBSS is widely used to understand and improve public health for students in the United States. Health risk behaviors and outcomes identified through the YRBSS can result in a better understanding of the health of students. These data collected and analyzed can support educators, policymakers, researchers, and advocates prioritize interventions that can reduce health risk behaviors and enhance outcomes for high school students.

Appendix III: Outcome Tables

*** p≤.001 ** p≤.01 * p≤.05

See 1. Sadness and Suicidality, page 20

SADNESS AND SUICIDE RISK BEHAVIORS		
Outcome	**▲ Transgender**	**● Cisgender**
Felt Sad Or Hopeless ***	54.4 (47.8, 60.8)	31.2 (29.8, 32.6)
Seriously Considered Attempting Suicide ***	39.6 (33.5, 46.1)	16.4 (15.4, 17.5)
Made A Plan About How They Would Attempt Suicide ***	41.4 (33.1, 50.3)	13.9 (12.9, 15.1)
Attempted Suicide ***	36.3 (25.8, 48.2)	8.0 (7.1, 9.0)
Injured In A Suicide Attempt ***	14.2 (9.3, 21.2)	2.5 (2.1, 3.1)

SADNESS AND SUICIDE RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Feeling Sad Or Hopeless ***	27.2 (23.9, 30.7)	28.9 (26.3, 31.7)	32.1 (30.0, 34.3)	30.2 (28.6, 31.9)	37.1 (33.3, 41.1)
Seriously Considered Attempting Suicide *	14.5 (12.2, 17.1)	15.6 (13.9, 17.5)	14.7 (13.2, 16.4)	17.3 (15.8, 18.8)	19.2 (16.4, 22.3)
Made A Plan About How They Would Attempt Suicide	14.5 (11.7, 17.7)	13.5 (11.3, 16.0)	13.0 (11.0, 15.4)	14.0 (12.5, 15.6)	16.0 (13.4, 19.0)
Having Ever Attempted Suicide **	7.7 (5.6, 10.7)	9.9 (8.1, 12.0)	8.9 (7.2, 10.8)	6.7 (5.4, 8.2)	10.7 (8.6, 13.3)
Injured In A Suicide Attempt	2.5 (1.3, 4.7)	3.9 (2.6, 6.1)	2.9 (2.0, 4.1)	1.9 (1.4, 2.6)	3.3 (2.2, 4.9)

See 2. Driving, page 22

DRIVING RISK BEHAVIORS		
Outcome	▲ **Transgender**	● **Cisgender**
Rarely Or Never Wore A Seat Belt ***	12.3 (8.1, 18.5)	5.7 (4.9, 6.6)
Rode With A Driver Who Had Been Drinking Alcohol ***	30.6 (22.8, 39.6)	15.3 (14.1, 16.5)
Drove A Car Or Other Vehicle When They Had Been Drinking Alcohol ***	17.3 (11.6, 25.1)	4.2 (3.5, 5.0)
Texted Or Emailed While Driving A Car Or Other Vehicle **	51.5 (40.8, 62.1)	35.1 (30.9, 39.6)

DRIVING RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Rarely Or Never Wearing A Seatbelt ***	6.2 (3.8, 10.0)	7.9 (5.8, 10.6)	4.0 (2.8, 5.6)	4.6 (3.5, 6.1)	8.4 (6.6, 10.5)
Rode With A Driver Who Had Been Drinking Alcohol ***	11.0 (8.3, 14.5)	16.6 (14.6, 18.8)	17.2 (14.1, 20.7)	13.5 (12.2, 14.9)	18.9 (16.4, 21.6)
Drove A Car Or Other Vehicle When They Had Been Drinking Alcohol	7.9 (3.8, 15.6)	2.5 (1.4, 4.3)	4.9 (3.1, 7.7)	4.0 (3.2, 5.0)	4.6 (2.8, 7.4)
Texted Or Emailed While Driving A Car Or Other Vehicle ***	25.4 (18.1, 34.3)	25.6 (20.6, 31.3)	27.6 (22.1, 33.9)	42.4 (36.8, 48.3)	32.2 (27.6, 37.2)

See 3. Sexual Health, page 25

SEXUAL ACTIVITY RISK BEHAVIORS		
Outcome	**▲ Transgender**	**● Cisgender**
Ever Had Sexual Intercourse *	43.4 (35.0, 52.2)	33.7 (31.3, 36.2)
Had Sexual Intercourse For The First Time Before Age 13 Years ***	12.7 (9.1, 17.5)	2.7 (2.3, 3.1)
Had Sexual Intercourse With Four Or More Persons During Their Life ***	13.9 (10.0, 19.0)	6.8 (6.0, 7.8)
Were Currently Sexually Active	29.9 (22.5, 38.7)	23.9 (22.0, 25.9)
Drank Alcohol Or Used Drugs Before Last Sexual Intercourse	25.8 (16.8, 37.4)	18.2 (15.7, 20.9)
Used A Condom During Last Sexual Intercourse	46.4 (28.7, 65.0)	55.3 (52.0, 58.5)
Used Birth Control Pills Before Last Sexual Intercourse	23.8 (8.5, 51.4)	21.9 (19.2, 25.0)

See 3. Sexual Health, page 25

SEXUAL ACTIVITY RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Ever Had Sexual Intercourse ***	12.0 (8.8, 16.2)	38.4 (34.2, 42.8)	36.5 (33.2, 39.8)	33.5 (30.4, 36.7)	38.1 (34.7, 41.7)
Had Sexual Intercourse For The First Time Before Age 13 Years ***	1.7 (0.8, 3.5)	6.4 (4.9, 8.2)	3.1 (2.2, 4.2)	1.8 (1.3, 2.3)	3.0 (2.2, 4.3)
Had Sexual Intercourse With Four Or More Persons During Their Life ***	2.3 (1.3, 4.2)	10.6 (8.7, 12.8)	6.7 (5.5, 8.2)	6.5 (5.6, 7.7)	7.7 (5.9, 10.1)
Were Currently Sexually Active ***	8.5 (6.1, 11.5)	25.1 (21.4, 29.1)	25.7 (22.4, 29.3)	25.0 (22.4, 27.7)	26.3 (23.3, 29.5)
Drank Alcohol Or Used Drugs Before Last Sexual Intercourse	28.2 (17.7, 41.9)	15.7 (12.3, 19.9)	16.6 (12.1, 22.3)	18.5 (15.5, 21.9)	19.3 (13.0, 27.6)
Used A Condom During Last Sexual Intercourse	50.5 (37.9, 63.1)	52.9 (47.4, 58.3)	55.9 (48.1, 63.5)	53.7 (49.0, 58.4)	59.8 (53.6, 65.8)
Used Birth Control Pills Before Last Sexual Intercourse ***	14.4 (10.0, 20.2)	11.4 (8.1, 15.9)	13.5 (8.9, 20.0)	29.9 (26.4, 33.6)	18.3 (13.7, 24.0)

See 4. Sexual and Dating Violence and Sexual Assault, page 27

SEXUAL AND DATING VIOLENCE RISK BEHAVIORS		
Outcome	**▲ Transgender**	**● Cisgender**
Were Ever Physically Forced To Have Sexual Intercourse ***	25.3 (18.2, 34.1)	7.2 (6.4, 8.1)
Experienced Sexual Violence ***	35.1 (26.3, 45.1)	9.8 (8.8, 10.8)
Experienced Sexual Dating Violence ***	21.4 (16.0, 28.0)	8.2 (7.4, 9.0)
Experienced Physical Dating Violence ***	29.4 (20.4, 40.3)	7.9 (6.9, 9.0)

SEXUAL AND DATING VIOLENCE RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Having Been Forced To Have Sex *	5.7 (3.9, 8.4)	9.6 (8.2, 11.4)	7.8 (5.8, 10.4)	6.5 (5.7, 7.5)	8.4 (7.0, 10.1)
Experienced Sexual Violence	7.1 (4.2, 11.8)	10.8 (8.6, 13.6)	7.5 (5.1, 10.8)	11.3 (10.3, 12.5)	10.5 (8.2, 13.3)
Experienced Sexual Dating Violence **	10.6 (8.4, 13.2)	6.8 (5.1, 8.9)	10.6 (9.2, 12.2)	8.2 (7.3, 9.4)	7.7 (6.4, 9.3)
Experienced Physical Dating Violence **	7.8 (4.5, 13.2)	11.2 (9.3, 13.5)	7.3 (5.9, 9.0)	6.5 (5.2, 8.1)	10.6 (8.2, 13.5)

See 5. Alcohol Use, page 30

ALCOHOL USE RISK BEHAVIORS		
Outcome	**▲ Transgender**	**● Cisgender**
Ever Drank Alcohol **	71.0 (64.0, 77.1)	59.5 (56.9, 62.0)
Drank Alcohol Before Age 13 Years ***	39.1 (30.9, 48.0)	16.7 (15.1, 18.5)
Currently Drank Alcohol	31.8 (26.2, 38.1)	28.5 (26.2, 30.8)
Usually Obtained The Alcohol They Drank By Someone Giving It To Them ***	17.4 (10.0, 28.7)	41.5 (38.0, 45.1)
Currently Were Binge Drinking	15.3 (11.6, 20.0)	12.9 (11.2, 14.9)
Reported That The Largest Number Of Drinks They Had In A Row Was 10 Or More ***	7.8 (4.8, 12.5)	2.9 (2.3, 3.8)

ALCOHOL USE RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Ever Drank Alcohol ***	38.7 (32.2, 45.7)	50.4 (47.6, 53.2)	61.4 (56.2, 66.4)	63.3 (60.4, 66.1)	62.4 (58.2, 66.4)
Drank Alcohol Before Age 13 Years ***	10.0 (8.2, 12.2)	17.3 (15.4, 19.4)	20.2 (17.6, 23.2)	14.9 (12.9, 17.1)	20.9 (17.5, 24.7)
Currently Drank Alcohol ***	15.2 (12.4, 18.6)	17.5 (15.8, 19.4)	28.1 (23.8, 32.8)	33.9 (30.8, 37.1)	29.6 (25.9, 33.6)
Usually Obtained The Alcohol They Drank By Someone Giving It To Them	35.4 (22.5, 50.8)	39.3 (27.9, 51.9)	33.7 (28.8, 39.1)	43.4 (39.1, 47.8)	45.4 (39.1, 51.9)
Currently Were Binge Drinking ***	6.5 (4.6, 9.1)	5.8 (4.6, 7.2)	11.3 (8.6, 14.7)	17.5 (14.7, 20.7)	13.2 (10.4, 16.6)
Reported That The Largest Number Of Drinks They Had In A Row Was 10 Or More	2.2 (0.8, 5.7)	1.1 (0.5, 2.6)	3.0 (1.9, 4.5)	3.6 (2.7, 4.7)	3.3 (2.1, 5.2)

See 6. Tobacco Use, page 32

TOBACCO USE RISK BEHAVIORS		
Outcome	**▲ Transgender**	**● Cisgender**
Ever Tried Cigarette Smoking *	31.0 (24.1, 39.0)	23.4 (21.4, 25.5)
First Tried Cigarette Smoking Before Age 13 Years ***	28.9 (19.3, 40.9)	7.9 (6.9, 9.0)
Currently Smoked Cigarettes ***	21.4 (16.7, 27.0)	6.4 (5.5, 7.4)
Smoked More Than 10 Cigarettes Per Day ***	39.5 (22.8, 59.0)	5.3 (3.5, 7.9)
Ever Used An Electronic Vapor Product *	53.8 (43.0, 64.2)	42.4 (40.0, 44.9)
Currently Used An Electronic Vapor Product ***	27.1 (22.3, 32.4)	16.4 (15.0, 18.0)
Usually Got Their Own Electronic Vapor Products By Buying Them In A Store **	21.2 (15.0, 29.0)	10.0 (7.0, 13.9)
Currently Used Smokeless Tobacco ***	23.7 (16.8, 32.4)	3.4 (2.9, 4.1)
Currently Smoked Cigars ***	25.3 (20.9, 30.3)	6.7 (5.9, 7.6)
Tried To Quit Using All Tobacco Products	38.9 (16.2, 67.6)	44.6 (40.6, 48.6)

See 6. Tobacco Use, page 32

TOBACCO USE RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Ever Tried Cigarette Smoking ***	12.0 (8.5, 16.5)	16.8 (13.0, 21.4)	24.9 (21.7, 28.3)	24.9 (21.9, 28.1)	27.1 (24.5, 29.9)
First Tried Cigarette Smoking Before Age 13 Years *	5.2 (3.4, 7.9)	9.9 (7.4, 13.2)	8.3 (6.6, 10.4)	6.9 (5.3, 9.0)	10.3 (8.4, 12.6)
Current Cigarette Smoking ***	2.9 (1.8, 4.6)	3.1 (2.3, 4.2)	5.5 (4.4, 6.9)	8.1 (6.7, 9.8)	8.0 (5.9, 10.7)
Smoked More Than 10 Cigarettes Per Day	6.5 (2.1, 18.1)	18.6 (8.1, 37.2)	4.1 (2.2, 7.4)	6.2 (3.9, 9.6)	4.6 (1.6, 12.0)
Ever Used An Electronic Vapor Product ***	24.0 (18.4, 30.7)	35.2 (32.5, 38.0)	44.9 (41.4, 48.5)	42.8 (39.5, 46.1)	50.0 (46.2, 53.8)
Currently Used An Electronic Vapor Product ***	9.6 (7.5, 12.2)	9.3 (7.8, 11.1)	15.6 (13.2, 18.2)	19.2 (17.1, 21.6)	19.5 (16.6, 22.8)
Usually Got Their Own Electronic Vapor Products By Buying Them In A Store	16.9 (3.0, 56.9)	15.1 (8.1, 26.5)	11.2 (4.6, 25.0)	10.9 (6.7, 17.1)	6.3 (2.8, 13.6)
Currently Used Smokeless Tobacco **	2.6 (1.3, 5.2)	2.4 (1.8, 3.1)	2.2 (1.5, 3.1)	4.5 (3.7, 5.6)	4.6 (3.0, 6.9)
Currently Smoked Cigars ***	3.8 (2.9, 5.0)	5.6 (4.7, 6.6)	5.9 (4.9, 7.1)	7.8 (6.6, 9.3)	8.5 (7.4, 9.8)
Tried To Quit Using All Tobacco Products	39.5 (22.6, 59.4)	48.6 (35.4, 61.9)	36.1 (25.3, 48.5)	44.0 (39.2, 48.9)	55.1 (40.7, 68.6)

See 7. Marijuana Use, page 34

MARIJUANA USE RISK BEHAVIORS		
Outcome	**▲ Transgender**	**● Cisgender**
Ever Used Marijuana *	49.4 (39.0, 59.8)	37.1 (34.6, 39.8)
Tried Marijuana Before Age 13 Years ***	20.0 (15.5, 25.3)	6.7 (6.0, 7.5)
Currently Used Marijuana **	29.3 (24.2, 35.1)	21.3 (19.6, 23.1)

MARIJUANA USE RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Ever Used Marijuana ***	16.2 (12.2, 21.3)	41.2 (36.8, 45.6)	38.6 (34.0, 43.3)	36.6 (33.2, 40.2)	43.2 (39.4, 47.1)
Tried Marijuana Before Age 13 Years ***	3.3 (1.8, 5.9)	9.6 (8.2, 11.2)	6.9 (5.4, 8.9)	5.2 (4.2, 6.3)	10.2 (8.2, 12.6)
Currently Used Marijuana ***	8.9 (6.9, 11.4)	22.9 (19.8, 26.4)	20.3 (17.3, 23.5)	22.2 (19.9, 24.7)	25.4 (22.3, 28.7)

See 8. Other Illicit Drug Use, page 36

OTHER DRUG USE RISK BEHAVIORS		
Outcome	**▲ Transgender**	**● Cisgender**
Ever Used Any Illegal Drugs Other Than Pot ***	50.1 (42.4, 57.9)	16.6 (15.2, 18.1)
Ever Used Cocaine ***	25.6 (21.3, 30.3)	4.1 (3.6, 4.6)
Ever Used Inhalants ***	36.7 (25.6, 49.4)	5.4 (4.6, 6.4)
Ever Used Heroin ***	23.0 (18.9, 27.6)	1.9 (1.6, 2.2)
Ever Used Methamphetamines ***	26.4 (18.8, 35.8)	2.0 (1.6, 2.6)
Ever Used Ecstasy ***	28.9 (22.2, 36.6)	3.7 (2.9, 4.6)
Ever Used Synthetic Marijuana ***	29.3 (21.0, 39.1)	5.4 (4.6, 6.3)
Ever Took Steroids Without A Doctor's Prescription ***	21.2 (11.7, 35.2)	2.6 (1.8, 3.8)
Ever Took Prescription Pain Medicine Without A Doctor's Prescription Or Different ***	37.7 (28.6, 47.6)	12.4 (11.2, 13.6)
Ever Injected Any Illegal Drug ***	18.5 (13.2, 25.2)	1.7 (1.3, 2.2)
Were Offered, Sold, Or Given An Illegal Drug On School Property **	34.3 (28.0, 41.3)	23.8 (22.1, 25.7)

See 8. Other Illicit Drug Use, page 36

OTHER DRUG USE RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Ever Used Any Illegal Drugs Other Than Pot ***	11.2 (8.8, 14.1)	16.6 (14.5, 18.9)	17.3 (14.9, 19.9)	15.7 (14.0, 17.7)	22.4 (18.9, 26.2)
Ever Used Cocaine ***	3.7 (2.8, 4.7)	4.2 (3.3, 5.2)	5.0 (4.4, 5.8)	4.0 (3.3, 4.9)	6.6 (5.6, 7.7)
Ever Used Inhalants **	5.8 (3.5, 9.5)	5.8 (4.1, 8.1)	4.1 (2.8, 5.9)	5.1 (4.0, 6.4)	8.5 (6.3, 11.5)
Ever Used Heroin ***	2.1 (1.6, 2.9)	3.3 (2.6, 4.2)	2.5 (2.1, 3.1)	1.7 (1.2, 2.2)	2.9 (2.4, 3.5)
Ever Used Methamphetamines **	3.2 (1.5, 6.9)	2.6 (1.9, 3.5)	1.6 (1.1, 2.5)	1.5 (1.1, 2.1)	3.7 (2.4, 5.6)
Ever Used Ecstasy *	3.7 (1.8, 7.5)	4.5 (3.4, 6.0)	3.3 (2.2, 4.9)	2.9 (2.3, 3.7)	5.7 (3.9, 8.3)
Ever Used Synthetic Marijuana	3.3 (1.6, 6.5)	6.5 (5.3, 7.9)	5.2 (3.9, 6.9)	5.3 (4.0, 7.1)	7.0 (5.3, 9.3)
Ever Took Steroids Without A Doctor's Prescription	4.0 (2.0, 8.0)	2.6 (1.7, 4.1)	2.4 (1.4, 4.2)	2.0 (1.2, 3.3)	3.8 (2.0, 7.0)
Ever Took Prescription Pain Medicine Without A Doctor's Prescription *	7.6 (5.0, 11.6)	12.1 (10.5, 14.0)	13.4 (11.2, 15.8)	12.6 (10.8, 14.6)	14.4 (12.4, 16.6)
Ever Injected Any Illegal Drug	2.6 (1.5, 4.7)	2.5 (1.8, 3.5)	1.5 (0.9, 2.6)	1.2 (0.8, 1.9)	2.7 (1.5, 4.7)
Were Offered, Sold, Or Given An Illegal Drug On School Property *	18.1 (14.9, 21.9)	25.8 (22.0, 30.1)	23.7 (20.4, 27.5)	22.9 (20.5, 25.5)	27.3 (23.7, 31.3)

See 9. Food, Weight and Physical Activity, page 38

DIETARY RISK BEHAVIORS		
Outcome	**▲ Transgender**	**● Cisgender**
Did Not Drink Fruit Juice *	34.4 (26.8, 43.0)	26.7 (24.9, 28.6)
Did Not Eat Fruit ***	20.5 (15.9, 26.0)	10.7 (9.9, 11.6)
Did Not Eat Green Salad	48.9 (37.2, 60.7)	46.2 (43.1, 49.3)
Did Not Eat Potatoes	34.9 (26.0, 44.9)	35.7 (32.5, 39.0)
Did Not Eat Carrots ***	30.7 (23.2, 39.4)	49.4 (46.6, 52.2)
Did Not Eat Other Vegetables *	30.6 (22.8, 39.7)	20.4 (17.6, 23.6)
Did Not Drink A Can, Bottle, Or Glass Of Soda Or Pop	36.6 (28.2, 46.0)	32.3 (30.2, 34.4)
Did Not Drink Milk	33.6 (17.9, 53.9)	20.0 (17.9, 22.2)
Did Not Eat Breakfast ***	28.9 (22.3, 36.5)	14.7 (13.2, 16.3)

WEIGHT & WEIGHT MANAGEMENT RISK BEHAVIORS		
Outcome	**▲ Transgender**	**● Cisgender**
Described Themselves As Slightly Or Very Overweight	24.6 (18.2, 32.4)	31.8 (29.7, 33.9)
Were Trying To Lose Weight	41.9 (30.3, 54.5)	47.3 (45.0, 49.6)

PHYSICAL ACTIVITY PATTERNS		
Outcome	**▲ Transgender**	**● Cisgender**
Attended Physical Education (Pe) Classes On 1 Or More Days	54.5 (46.4, 62.5)	47.6 (43.5, 51.7)
Played On At Least One Sports Team *	40.7 (24.9, 58.6)	58.8 (53.7, 63.7)
Had A Concussion From Playing A Sport Or Being Physically Active ***	35.9 (30.3, 41.9)	15.2 (14.4, 16.1)

See 9. Food, Weight and Physical Activity, page 38

DAILY ACTIVITY PATTERNS		
Outcome	**▲ Transgender**	**● Cisgender**
Were Physically Active At Least 60 Minutes Per Day On 5 Or More Days ***	24.5 (18.7, 31.3)	46.9 (44.7, 49.2)
Watched Television 3 Or More Hours Per Day *	13.3 (9.9, 17.8)	19.8 (18.3, 21.4)
Played Video Or Computer Games Or Used A Computer 3 Or More Hours Per Day	39.8 (33.6, 46.2)	43.9 (41.8, 46.1)

DIETARY RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Did Not Drink Fruit Juice *	33.9 (27.7, 40.8)	23.1 (19.8, 26.6)	24.7 (21.2, 28.5)	27.2 (25.1, 29.2)	26.7 (22.8, 31.1)
Did Not Eat Fruit ***	11.0 (8.8, 13.7)	21.4 (19.7, 23.3)	10.3 (9.1, 11.6)	8.6 (7.5, 9.7)	9.9 (8.3, 11.9)
Did Not Eat Green Salad ***	41.0 (36.9, 45.1)	55.7 (51.9, 59.4)	50.8 (46.4, 55.2)	40.2 (35.8, 44.7)	51.0 (46.2, 55.7)
Did Not Eat Potatoes *	37.7 (30.3, 45.7)	44.0 (40.3, 47.7)	41.7 (36.0, 47.6)	31.8 (28.9, 35.0)	33.4 (25.3, 42.5)
Did Not Eat Carrots ***	40.5 (33.1, 48.3)	64.8 (59.3, 69.9)	49.1 (43.1, 55.1)	44.4 (39.6, 49.3)	53.4 (49.2, 57.6)
Did Not Eat Other Vegetables ***	10.7 (8.1, 13.9)	27.3 (24.3, 30.5)	25.8 (20.7, 31.5)	15.9 (13.4, 18.8)	25.6 (20.6, 31.4)
Did Not Drink A Can, Bottle, Or Glass Of Soda Or Pop ***	43.2 (36.8, 49.8)	29.5 (27.5, 31.5)	27.0 (24.2, 29.9)	35.2 (32.6, 37.9)	28.4 (25.1, 32.0)
Did Not Drink Milk *	19.5 (14.1, 26.4)	30.7 (23.5, 39.0)	18.1 (13.7, 23.6)	19.7 (16.9, 22.9)	18.0 (15.0, 21.4)
Did Not Eat Breakfast ***	14.3 (10.8, 18.7)	16.4 (14.3, 18.8)	16.2 (13.9, 18.8)	12.1 (10.4, 14.2)	18.4 (15.7, 21.4)

See 9. Food, Weight and Physical Activity, page 38

WEIGHT & WEIGHT MANAGEMENT RISK BEHAVIORS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Described Themselves As Slightly Or Very Overweight ***	26.9 (19.9, 35.4)	28.5 (25.6, 31.5)	38.7 (36.0, 41.5)	27.6 (24.8, 30.7)	37.0 (32.9, 41.3)
Were Trying To Lose Weight ***	42.5 (36.7, 48.4)	40.5 (36.8, 44.4)	53.1 (49.9, 56.2)	44.6 (41.4, 47.9)	52.9 (48.8, 57.0)

PHYSICAL ACTIVITY PATTERNS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Attended Physical Education (Pe) Classes On 1 Or More Days ***	48.9 (42.6, 55.1)	49.2 (44.2, 54.2)	55.4 (48.7, 62.0)	41.1 (36.5, 45.9)	52.9 (45.8, 59.8)
Played On At Least One Sports Team ***	53.0 (46.6, 59.3)	53.4 (47.6, 59.2)	50.9 (44.4, 57.4)	68.8 (61.5, 75.3)	58.0 (52.4, 63.4)
Had A Concussion From Playing A Sport Or Being Physically Active	15.6 (12.1, 19.7)	15.5 (13.5, 17.7)	16.9 (15.3, 18.5)	14.7 (13.3, 16.3)	17.9 (16.3, 19.6)

DAILY ACTIVITY PATTERNS					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Were Physically Active At Least 60 Minutes Per Day On 5 Or More Days ***	43.8 (37.7, 50.2)	37.5 (35.1, 40.0)	43.8 (39.3, 48.4)	50.3 (47.6, 52.9)	48.1 (43.8, 52.4)
Watched Television 3 Or More Hours Per Day ***	13.7 (10.6, 17.6)	28.5 (26.5, 30.5)	22.0 (19.4, 24.8)	16.7 (15.0, 18.5)	21.1 (18.3, 24.2)
Played Video Or Computer Games Or Used A Computer 3 Or More Hours Per Day **	47.9 (44.5, 51.4)	42.7 (39.9, 45.5)	45.9 (41.6, 50.2)	40.9 (38.3, 43.5)	47.4 (43.1, 51.7)

See 10. Other Health and Well-Being, page 42

OTHER HEALTH & WELL-BEING		
Outcome	**▲ Transgender**	**● Cisgender**
Were Ever Tested For Human Immunodeficiency Virus (HIV) ***	29.0 (21.7, 37.6)	11.5 (10.4, 12.7)
Saw A Dentist ***	51.4 (39.5, 63.2)	72.1 (68.4, 75.5)
Had Ever Been Told By A Doctor Or Nurse That They Had Asthma	27.6 (21.9, 34.2)	23.9 (22.6, 25.3)
Got 8 Or More Hours Of Sleep	16.9 (10.7, 25.6)	25.0 (23.8, 26.4)
Described Their Grades In School As Mostly A's Or B's *	62.5 (55.2, 69.3)	72.0 (68.7, 75.0)

OTHER HEALTH & WELL-BEING					
Outcome	**Percent Among API**	**Percent Among Black**	**Percent Among Latinx**	**Percent Among White**	**Percent Among All Other**
Were Ever Tested For Human Immunodeficiency Virus (HIV) ***	8.0 (5.8, 11.0)	18.0 (16.1, 20.1)	13.0 (10.6, 15.9)	10.0 (8.9, 11.3)	11.6 (9.3, 14.3)
Saw A Dentist ***	72.5 (65.4, 78.7)	65.6 (61.3, 69.6)	64.9 (58.9, 70.5)	81.7 (78.1, 84.8)	65.1 (57.4, 72.1)
Had Ever Been Told By A Doctor Or Nurse That They Had Asthma **	18.6 (14.9, 23.0)	28.3 (26.5, 30.2)	21.7 (19.5, 24.1)	24.6 (22.9, 26.4)	24.6 (20.9, 28.7)
Got 8 Or More Hours Of Sleep **	22.2 (18.6, 26.3)	19.6 (17.0, 22.6)	28.0 (25.4, 30.6)	25.0 (23.1, 27.1)	25.7 (22.7, 28.9)
Gets Mostly As Or Bs ***	83.9 (78.5, 88.2)	62.2 (56.9, 67.2)	61.6 (57.7, 65.3)	80.0 (76.6, 83.0)	63.3 (58.1, 68.3)

Appendix IV: Works Cited

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