Evaluating Key Aspects of Student Health:
Youth Risk Behavior Survey, 2015

1. What is the purpose of this report?

This report examines the results of the 2015 Youth Risk Behavior Survey (YRBS), developed by the Centers for Disease Control and Prevention to monitor health-risk behaviors that contribute to the leading causes of death and disability among youth and adults. The YRBS, conducted biennially at the national and state/local levels, monitors the following four risk categories: a) unintentional injuries and violence; b) tobacco, alcohol, and other drug use; c) sexual behaviors; and d) dietary behaviors and physical activity. Specifically analyzed is the relationship between representative at-risk behaviors reported by senior high students in Miami-Dade County Public Schools (M-DCPS) who participated in the YRBS.

2. Which populations are targeted in this report?

High school students in all M-DCPS traditional schools and charter schools comprised the YRBS target population. A representative sample of third period classes was randomly selected to participate in the survey. The sample consisted of 9th graders (n = 485), 10th graders (n = 813), 11th graders (n = 733), and 12th graders (n = 667), for a total of 2,728 participants. The sample was weighted by gender, race/ethnicity, and grade to represent M-DCPS demographics in subsequent analyses. See Table 1 for the number of participants, organized by grade and student characteristics.

3. How were the data for this report collected and analyzed?

Data to conduct these analyses were obtained from the YRBS, which was administered during spring 2015. The survey adhered to a multiple-choice format with responses completely anonymous. Race, gender, age, and grade level reported on the survey were included as control variables in all analyses.

Ordinal regression was used to examine the relationship between student characteristics and example at-risk behaviors within each of the four categories: unintentional injuries (suicide), substance use (alcohol, marijuana, an aggregate of hard drugs, cigarettes, inhalants, and steroids), sexual behavior (recent sexual activity), and obesity (Body Mass Index). For the purpose of this study, student characteristics are assumed to affect risk directly and also by acting through substance use which in turn also affects risk, as shown in Figure 1.

Table 1. Number of Participants - Student Characteristics by Grade

| | | Grade | | | |
	9th	10th	11th	12th	Totals
Gender					
Male	246 (13,352)	387 (13,412)	369 (12,246)	346 (11,999)	1,348 (51,009)
Female	239 (12,935)	422 (12,993)	362 (12,508)	321 (12,249)	1,344 (50,685)
Ethnicity					
Hispanic	319 (17,042)	581 (19,985)	460 (16,300)	397 (15,703)	1,757 (69,030)
Black	110 (5,652)	169 (4,125)	199 (5,735)	223 (6,844)	701 (22,356)
White/Other	53 (3,371)	59 (2,469)	63 (2,647)	42 (1,606)	217 (10,093)
Sexual Orientation					
Heterosexual	409 (21,871)	696 (23,259)	648 (21,867)	571 (21,072)	2,324 (88,069)
LGBTQ	54 (2,793)	93 (2,562)	69 (2,362)	64 (2,283)	280 (10,000)
Age					
Over-Age[a]	38 (1,955)	59 (1,609)	61 (1,913)	0 (0)	158 (5,477)
Modal Age	445 (24,222)	753 (24,899)	671 (22,921)	667 (24,248)	2,536 (96,290)

Note. Unweighted values are displayed outside of parentheses and values weighted to represent M-DCPS are displayed within parentheses.
[a]*Students who were over the modal age for their grade were classified as over-age.*
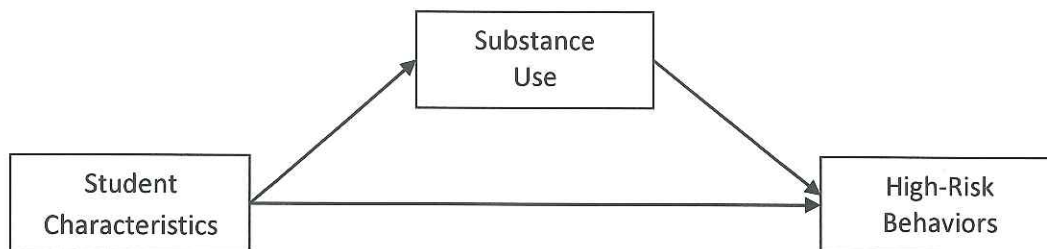
Figure 1. Relationship between predictor variables and outcome variables.

4. **To what extent did students respond to the survey?**

   Ninety-seven percent of the sixty-nine high schools that were sampled completed surveys (n = 67). Overall, 80% of the students (n = 2,728) in the classes targeted completed questionnaires.

5. **Which student characteristics contribute to substance use among high school students in M-DCPS?**

   Table 2 depicts the relationship between student characteristics (rows) and substance type (columns). Ordinal regression was used to examine this relationship with cells with arrows representing statistically significant (p < .05) effects. Up arrows refer to significantly increased risk of substance use, while down arrows refer to significantly decreased risk. Cells with dashes "-" represent non-significant effects.

Table 2. Student Characteristics as Predictors of Substance Use

Student Characteristics	Alcohol	Marijuana	Hard Drugs[a]	Cigarettes	Inhalants	Steroids
Age	⬆	⬆	⬆	⬆	⬇	⬆
Female[b]	⬆	⬇	⬇	⬇	⬇	⬇
Ethnicity[c] Hispanic	⬆	⬇	-	⬇	⬆	⬆
Black	⬇	⬇	⬇	⬇	⬆	⬆
LGBTQ[d]	⬆	⬆	⬆	⬆	⬆	⬆

Note. Up arrows refer to significantly increased risk of substance use, while down arrows refer to significantly decreased risk. Cells with dashes "-" represent non-significant effects.
[a]Hard drugs include cocaine, methamphetamines, heroin, Ecstasy, and prescription drugs. [b]Females compared to males. [c]Ethnicity: Each ethnic category (i.e., Black and Hispanic) compared to White/Other. [d]LGBTQ (Lesbian, Gay, Bisexual, Transgender, or Questioning) compared to heterosexual.

Impact: In general, student characteristics were predictive of risk across a variety of substances, ranging from substances as common as alcohol, to extremely addictive drugs, such as heroin.

- Older students were more likely to use every substance other than inhalants.
- Females were less likely than males to use every type of substance, except for alcohol, which they were more likely to use.
- Hispanic students were more likely than White/Other students to use alcohol, inhalants, and steroids. However, Hispanics were less likely than White/Other students to use marijuana and cigarettes. Black students were more likely than White/Other to use inhalants and steroids. However, Black students were less likely than White/Other to use alcohol, marijuana, hard drugs, and cigarettes.
- Students who identified as lesbian, gay, bisexual, transgender, or unsure/questioning (LGBTQ) were more at-risk than heterosexual students for using all of the substances.

6. What factors contribute to attempting suicide among high school students in M-DCPS?
Attempted suicide was chosen to exemplify the behaviors from the 'unintentional injury and violence' category.

Prevalence. Table 3 lists the total number of students who responded to the question, "During the past 12 months, how many times did you actually attempt suicide; A. 0 times, B. 1 time, C. 2 or 3 times, D. 4 or 5 times, E. 6 or more times?"

Table 3. High School Students Who Attempted Suicide One or More Times

Grade	Total	Have Attempted Suicide n	Have Attempted Suicide %
9	404	30	7.4
10	674	49	7.3
11	598	46	7.7
12	535	32	6.0
Total	2,211	157	7.1

- Overall, 7.1% of the responding M-DCPS students indicated that they had attempted suicide, with the lowest incidence in Grade 12.

Impact: An ordinal regression analysis was used to estimate the impact of student characteristics and conceptual predictor variables (e.g., being dissatisfied with one's body, having experienced bullying, screen time, etc.) on whether students have attempted suicide. See Table 4 for a summary of the impact of predictor variables on attempted suicide. The student characteristics listed in Table 4 are compared to their counterparts (e.g. females compared to males, Hispanic students compared to White/Other students, LGBTQ students compared to heterosexual students, etc.). Only predictors that were statistically significant were included below.

Table 4. Predictors of Risk Behaviors

Predictor Variables	Attempted Suicide	Sexually Active	Obese
Female	↑	↓	-
Ethnicity — Hispanic	↑	↑	-
Black	↑	↑	↓
LGBTQ	↑	↑	-
Age — Over-for-Grade	↑	↓	-
Substances — Alcohol	↑	↑	↓
Marijuana	↑	↑	↓
Hard Drugs	↑	↑	↑
Cigarettes	↑	↑	↓
Steroids	↑	↑	↓
Inhalants	↓	↑	↑

Body Dissatisfaction	↑	↓	↑
Screen Time[a]	↑	↓	↑
Bullied	↑	-	↓
Success in School[b]	↓	↓	↓

Note. Up arrows refer to significantly increased risk of behavior, while down arrows refer to significantly decreased risk. Cells with dashes "-" represent non-significant effects.
[a]Screen Time: students who spent time in front of electronic devices (watching television, playing video games, browsing the internet or social media on their computer) compared to students who did not. [b]Success in School: students who earned mostly A's or B's compared to students who earned C's through F's.

- Female students were more likely than male students to attempt suicide.
- Hispanic students and Black students were more likely than White/Other students to attempt suicide.
- LGBTQ students were more likely to attempt suicide than students who identified as heterosexual.
- Students who were over-age for their grade were less likely to attempt suicide than, students who were the modal age for their grade.
- Students who used any type of substance were more likely attempt suicide than students who did not use substances. One exception was that students who used inhalants were less likely to attempt suicide than students who did not.
- Students who were dissatisfied with their body (n = 1,216[1]) were more likely to attempt suicide than students who were satisfied with their body (n = 1,427).
- Students who spent time watching TV, playing video games, or browsing the internet (n = 2,535) were more likely to attempt suicide than students who did not engaged in those activities (n = 193).
- Students who reported being bullied (n = 289) were more likely to attempt suicide than students who did not report being bullied (n = 2,412).
- Students who earned, on average, A's and B's (n = 1,762), were less likely to attempt suicide than students who earned C's, D's, or F's (n = 845).

7. What factors lead to having sex among high school students in M-DCPS?

Being sexually active was chosen to exemplify the behaviors from the category 'Sexual behaviors that result in HIV infection, other sexually transmitted diseases, and unwanted pregnancies.'

Prevalence. Students responded to the question "During the past 3 months, with how many people did you have sexual intercourse, A. I have never had sexual intercourse, B. I have had sexual intercourse, but not during the past 3 months, C. 1 person, D. 2 people, E. 3 people, F. 4 people, G. 5 people, H. 6 or more people?" Table 5 lists the students per grade who indicated they were sexually active with one or more individuals during the past 3 months.

Table 5. High School Students Who Were Sexually Active

Grade	Were Sexually Active		
	Total	n	%
9	436	54	12.4
10	750	166	22.1
11	664	208	31.3
12	600	269	44.8
Total	2,450	697	28.4

- Overall, 28.4% of students were sexually active, with the highest incidence in Grade 12.

Impact: An ordinal regression analysis was used to estimate the impact of student characteristics and conceptual predictor variables on whether students were sexually active. See Table 4 for a summary of the impact of predictor variables on being sexually active. Only predictors that were statistically significant were included below.

- Female students were less likely than male students to be sexually active.
- Hispanic and Black students were more likely than White/Other to be sexually active.
- Students who identified as LGBTQ were more likely to be sexually active than students who identified as heterosexual.
- Students who were over-age for their grade were more likely to be sexually active than students who were the modal age for their grade.
- Students who used any type of substance were more likely to be sexually active than students who did not use any substances.
- Students who were dissatisfied with their body were less likely to be sexually active than students who were satisfied with their body.
- Students who spent time watching TV, playing video games, or browsing the internet were less likely to be sexually active than students who did not engage in those activities.
- Students who reported being bullied were less likely to be sexually active than students who did not report being bullied.
- Students who earned, on average, A's and B's were less likely to be sexually active than students who earned C's, D's, or F's.

8. What factors lead to obesity in students?

Obesity was chosen to exemplify the behaviors from both the 'Unhealthy dietary behaviors' and the 'Inadequate physical activity' categories.

Prevalence. Table 6 lists the total number of students who were obese according to their Body Mass Index (BMI), as calculated using responses to the questions, "How much do you weigh without shoes on?" and "How tall are you without your shoes on?" A score of 30 or above on BMI indicates obesity.

Table 6. High School Students Who Were Obese Based on BMI

Grade	Total	Were Obese	
		n	%
9	414	26	6.3
10	746	62	8.3
11	672	68	10.1
12	613	65	10.6
Total	2,445	221	9.0

- Overall, 9% of students were obese, with the highest incidence of obesity in Grade 12.

Impact: An ordinal regression analysis was used to estimate the impact of student characteristics and conceptual predictor variables on whether students were obese. See Table 4 for a summary of the impact of predictor variables on obesity. Only predictors that were statistically significant were included below.

- Black students were less likely than White/Other students to be obese.
- Students who used hard drugs and inhalants were more likely to be obese than students who did not use those substances. However, students who used alcohol, marijuana, cigarettes, and steroids were less likely to be obese than students who did not use those substances.
- Students who were dissatisfied with their body were more likely to be obese than students who were satisfied with their body.
- Students who spent time watching TV, playing video games, or browsing the internet were more likely to be obese than students who did not engage in those activities.
- Students who reported being bullied were less likely to be obese than students who did not report being bullied.
- Students who earned, on average, As and Bs were less likely to be obese than students who earned Cs, Ds, or Fs.
- None of the nutrition questions significantly predicted either BMI based or subjective obesity.

9. What are the principal conclusions of this report?

This report examined the results of the Youth Risk Behavior Survey (YRBS), developed by the Centers for Disease Control and Prevention to monitor health-risk behaviors that contribute to the leading causes of death and disability among youth and adults organized into four risk categories: a) unintentional injuries and violence; b) tobacco, alcohol, and other drug use; c) sexual behaviors; and d) dietary behaviors and physical activity. A representative sample of third period classes randomly selected from traditional high schools and charter schools with more than 2,000 students in the M-DCPS was surveyed.

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Ordinal regression was used to examine the relationship between student characteristics and example at-risk behaviors within each of the four categories. The data were weighted by gender, race/ethnicity, and grade, so that outcomes from the analysis would yield district values. Race, gender, age, and grade level reported on the survey were included as control variables in all analyses.

Student characteristics were found to be predictive of key risk behaviors (substance use, attempted suicide, sexual activity, and obesity) with substance use in almost every case, predicting a greater likelihood of engaging in the other key risk behaviors. Among the student characteristics, LGBTQ students were more likely to use all of the substances measured by the YRBS and were also more at risk for attempting suicide and engaging in sexual activity. Similarly, students who were over-age for their grade were more likely to attempt suicide. The results for gender and ethnicity were mixed. Certain conceptual variables were predictive of risk as well. Screen time, having been bullied, and being dissatisfied with one's body all increased the risk of attempting suicide. However, earning A's and B's in school had a mitigating effect on risk behaviors, in that the likelihood of suicide, sexual activity, and obesity decreased with higher grades.

This report also found that the majority of the YRBS's questions regarding diet and physical activity were not predictive of Body Mass Index. For example, playing sports, attending physical education classes, and consuming sugary beverages were not significantly related to BMI. Given that student characteristics and other conceptual variables were predictive of BMI, the present report recommends reevaluating the phrasing used by the questions related to recent consumption of food/drink and physical activity.