



Adverse Childhood Experiences (ACEs) on the Maryland Youth Risk Behavior Survey/ Youth Tobacco Survey (YRBS/YTS) (Frederick & Baltimore City Examples)

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Mission and Vision

MISSION

The mission of the Prevention and Health Promotion Administration is to protect, promote and improve the health and well-being of all Marylanders and their families through provision of public health leadership and through community-based public health efforts in partnership with local health departments, providers, community based organizations, and public and private sector agencies, giving special attention to at-risk and vulnerable populations.

VISION

The Prevention and Health Promotion Administration envisions a future in which all Marylanders and their families enjoy optimal health and well-being.

Overview

1. Maryland YRBS/YTS Overview

2. ACE Question Selection

3. 2018 Maryland YRBS/YTS Survey Results

4. Summary

Maryland YRBS/YTS Overview

Maryland YRBS/YTS Key Facts

- CDC provides the core YRBS survey questions and approves the questionnaire
 - Maryland uses 2/3 Core YRBS and 1/3 YTS and stakeholder requests
- Separate Middle School and High School Instruments
- State- and Jurisdiction-level data
- Conducted via paper and pencil during one class period (45 min)
- The survey is confidential and anonymous
- CDC produces data tables and figures of all survey questions

Selection of ACE Questions

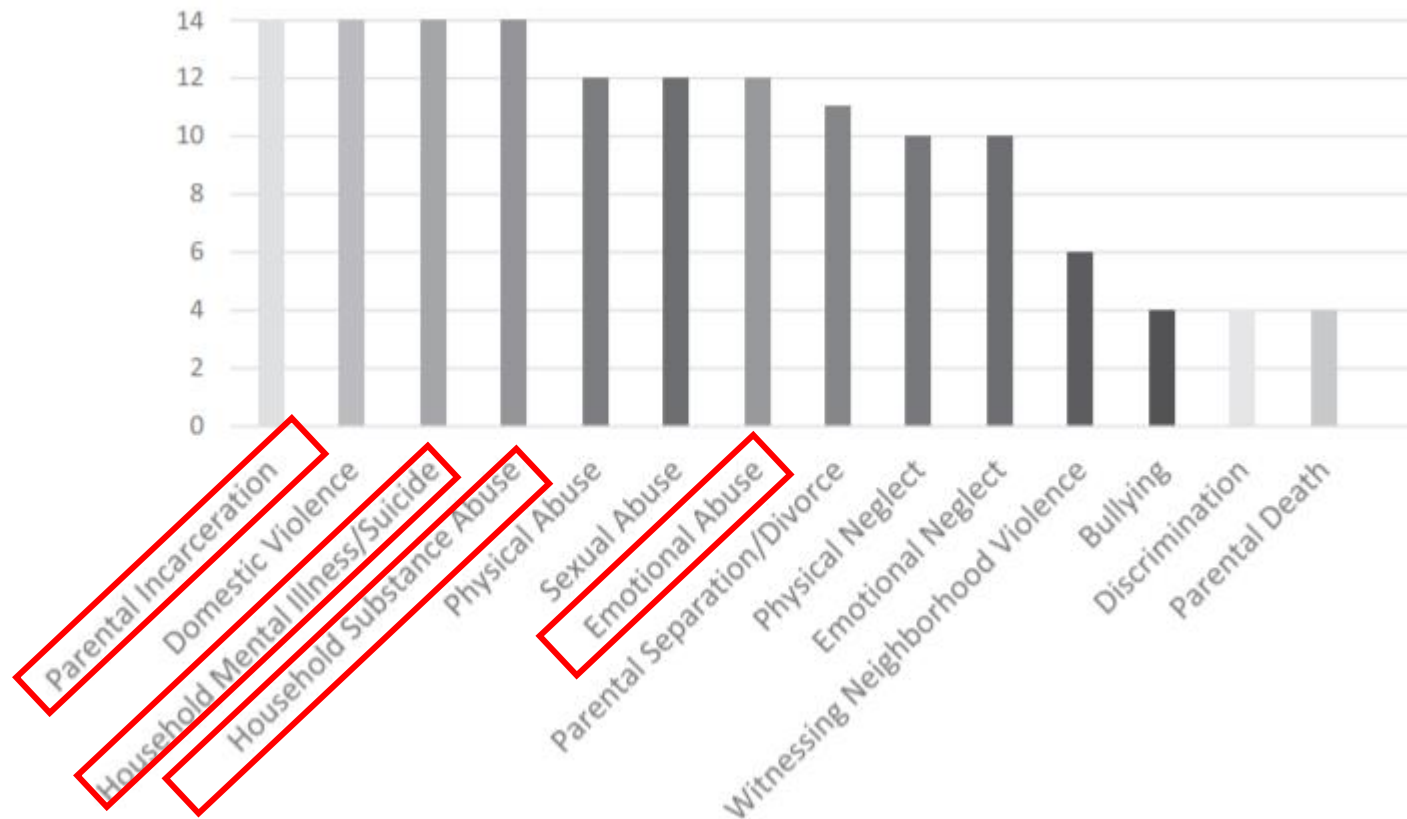


Figure 1. Prevalence of assessment of particular ACEs among 14 tools evaluated in this article.

- Bethell et. al. evaluated 14 ACE assessment tools
 - Recommended to ask a minimum of **FOUR** questions
 - Selected four of the most prevalent ACEs
 - Those who experienced these most prevalent ACEs were more likely to have experienced other ACEs

Final Maryland ACE YRBS/YTS Questions

- Emotional Abuse
 - Does a parent or other adult in your home regularly swear at you, insult you, or put you down?
- Household Mental Illness
 - Have you ever lived with anyone who was depressed, mentally ill, or suicidal?
- Household Substance Misuse
 - Have you ever lived with anyone who was an alcoholic or problem drinker, used illegal street drugs, took prescription drugs to get high, or was a problem gambler?
- Household Incarceration
 - Has anyone in your household ever gone to jail or prison?

5 ACE questions, 1 Additional PCE question on the 2021 YRBS/YTS

2018 MD YRBS/YTS ACE Survey Results

2018-19 High School MD YRBS/YTS Participation

- Survey Administration from *September 26th* → *December 14th*

184 high schools participated

41,891 HS students completed surveys

- **41,091** usable surveys

80% overall HS response rate

2018-19 Frederick County YRBS/YTS Participation

- Survey Administration from *September 26th* → *December 14th*

10 high schools participated

3,488 HS students completed surveys

- **3,461** usable surveys

84% overall HS response rate

2018-19 Baltimore City HS MD YRBS/YTS Participation

- Survey Administration from *September 26th* → *December 14th*

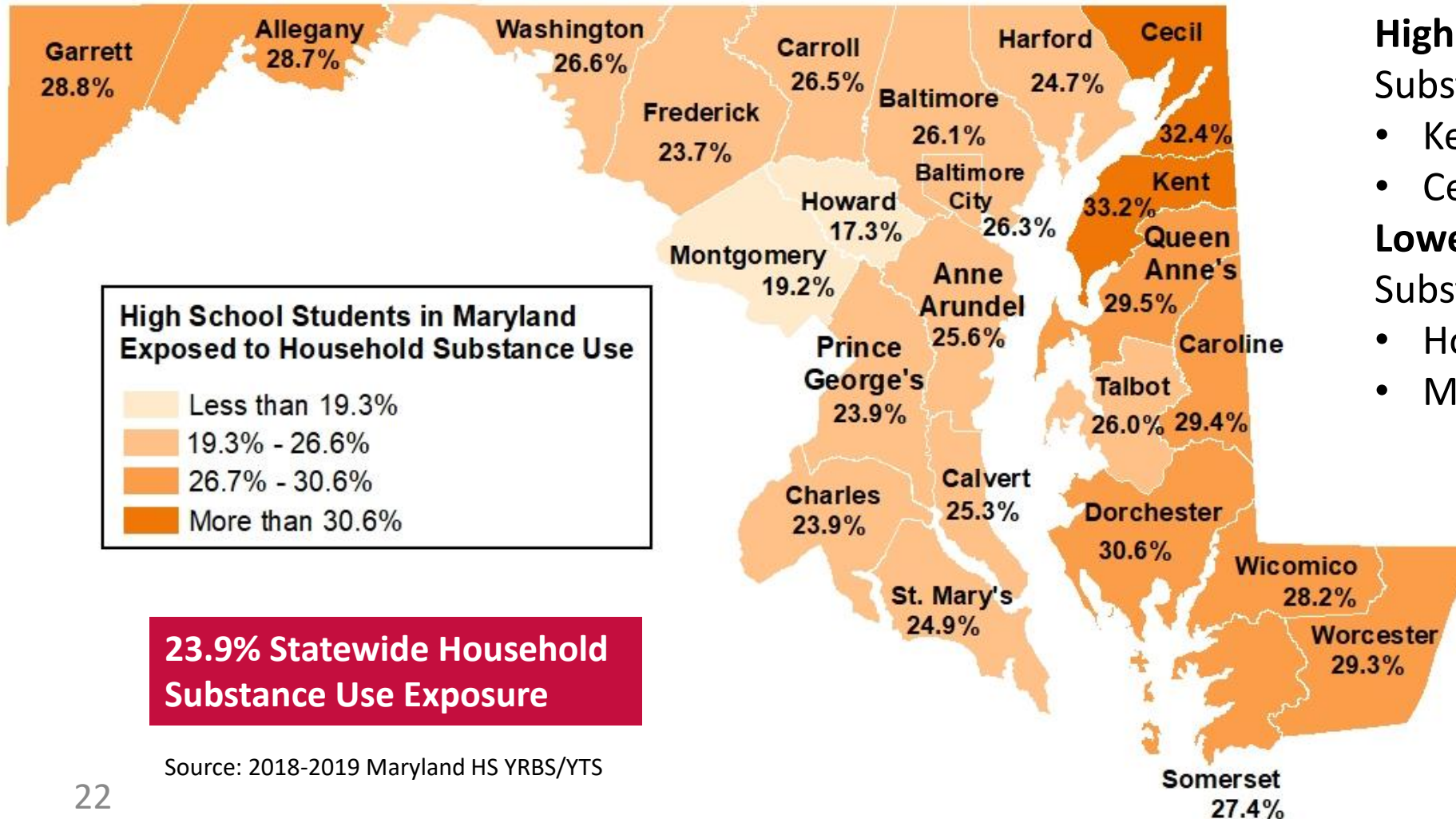
25 high schools participated

1,467 HS students completed surveys

- 1,374 usable surveys

70% overall HS response rate

MAP: High School Students Who Have Ever Lived with Anyone Who Was an Alcoholic or Problem Drinker, Used Illegal Street Drugs, Took Prescription Drugs to Get High, or Was a Problem Gambler



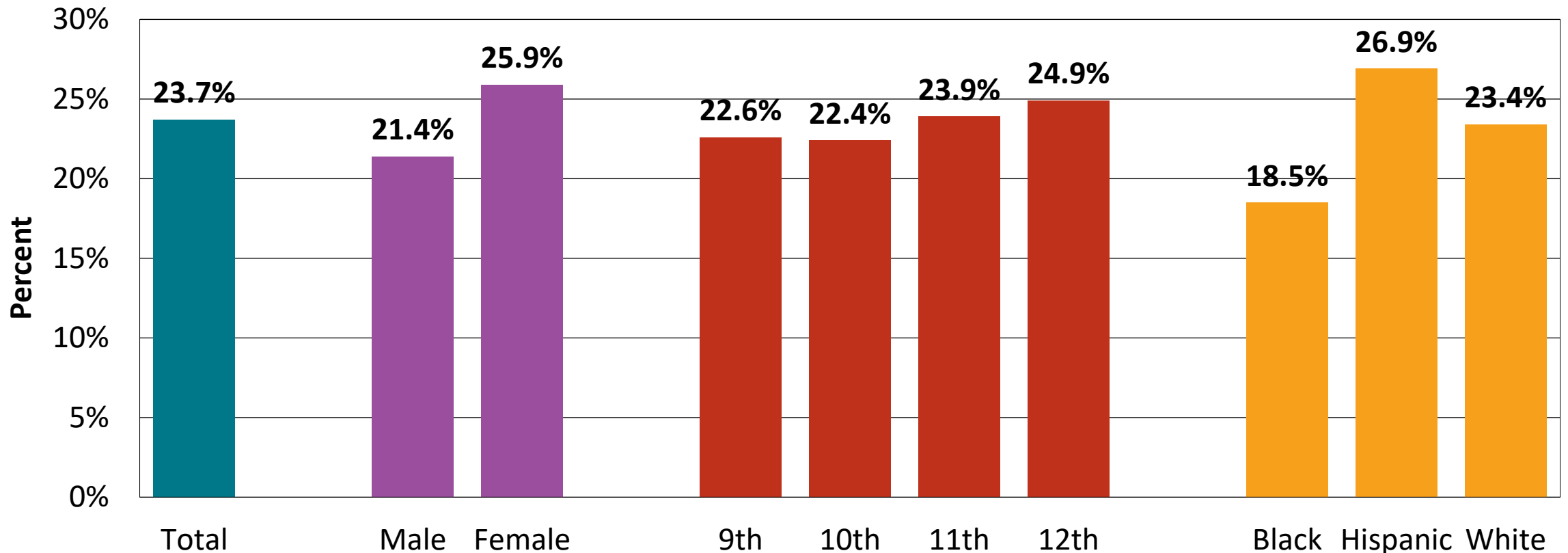
Highest Exposure to Household Substance Use

- Kent
- Cecil

Lowest Exposure to Household Substance Use

- Howard
- Montgomery

Percentage of Frederick County HS Students Who Have Ever Lived with Anyone Who Was an Alcoholic or Problem Drinker, Used Illegal Street Drugs, Took Prescription Drugs to Get High, or Was a Problem Gambler

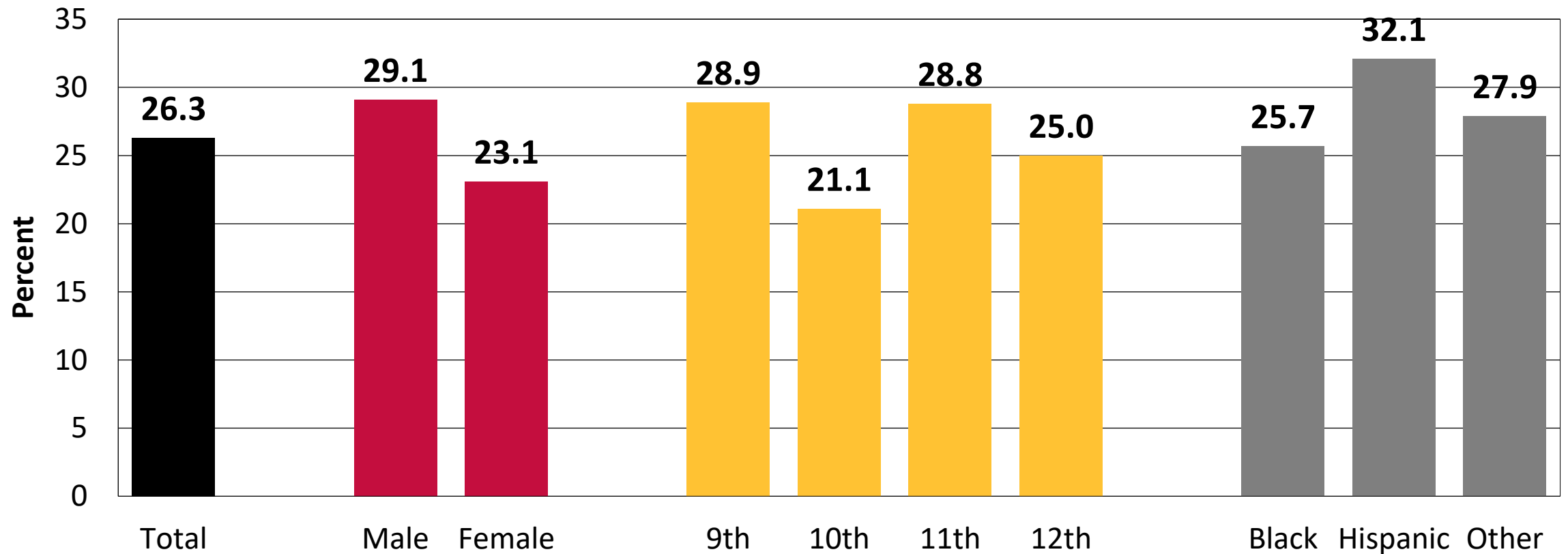


*F > M; H > B, W > B (Based on t-test analysis, $p < 0.05$.)

All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.

This graph contains weighted results.

Percentage of Baltimore City HS Students Who Have Ever Lived with Anyone Who Was an Alcoholic or Problem Drinker, Used Illegal Street Drugs, Took Prescription Drugs to Get High, or Was a Problem Gambler



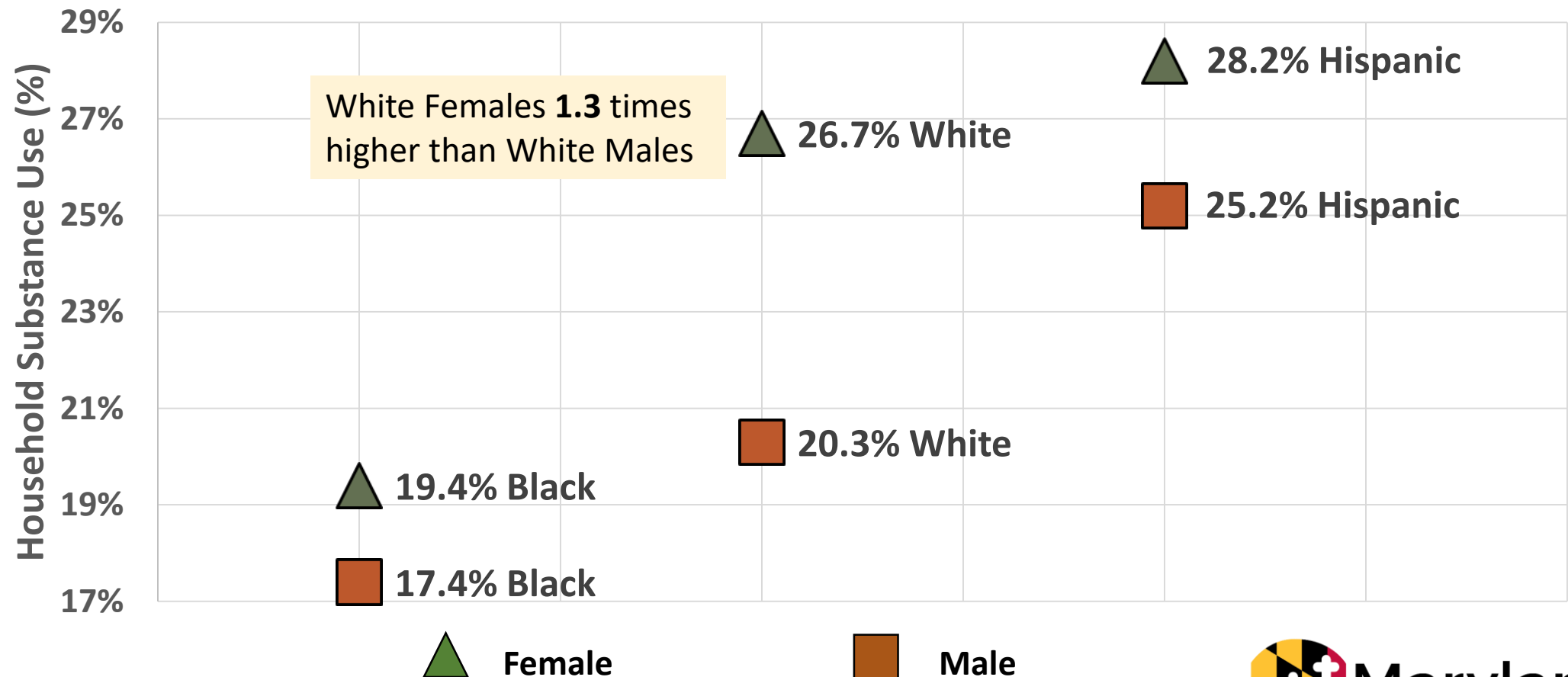
*M > F; 9th > 10th, 11th > 10th (Based on t-test analysis, $p < 0.05$.)

All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.

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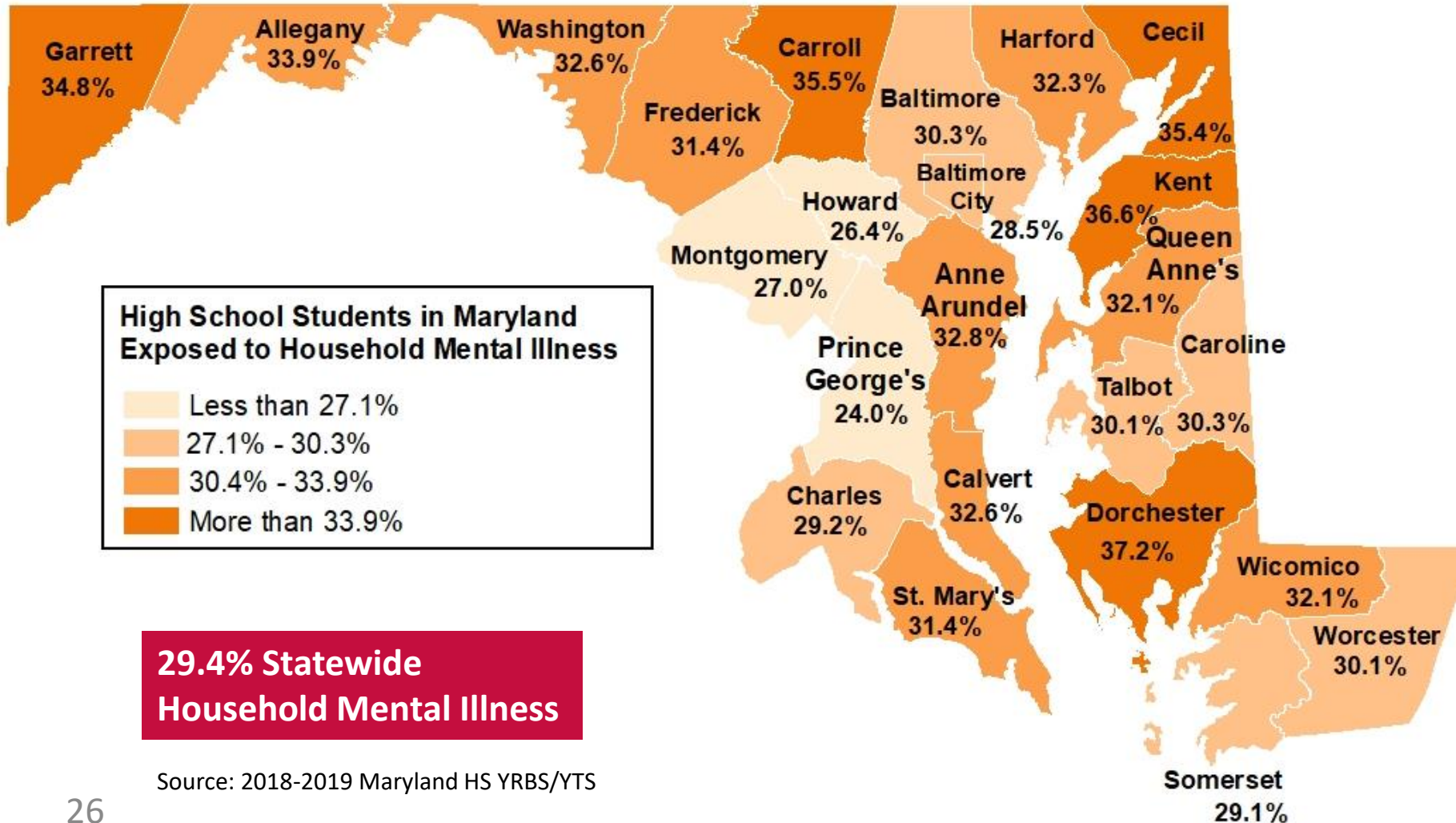
24 Source: 2018-2019 Maryland HS YRBS/YTS

Frederick County HS Students Who Have Ever Lived with Anyone Who Was an Alcoholic or Problem Drinker, Used Illegal Street Drugs, Took Prescription Drugs to Get High, or Was a Problem Gambler



Source: 2018-2019 Maryland HS YRBS/YTS

MAP: High School Students Who Ever Lived with Anyone Who Was Depressed, Mentally Ill, or Suicidal



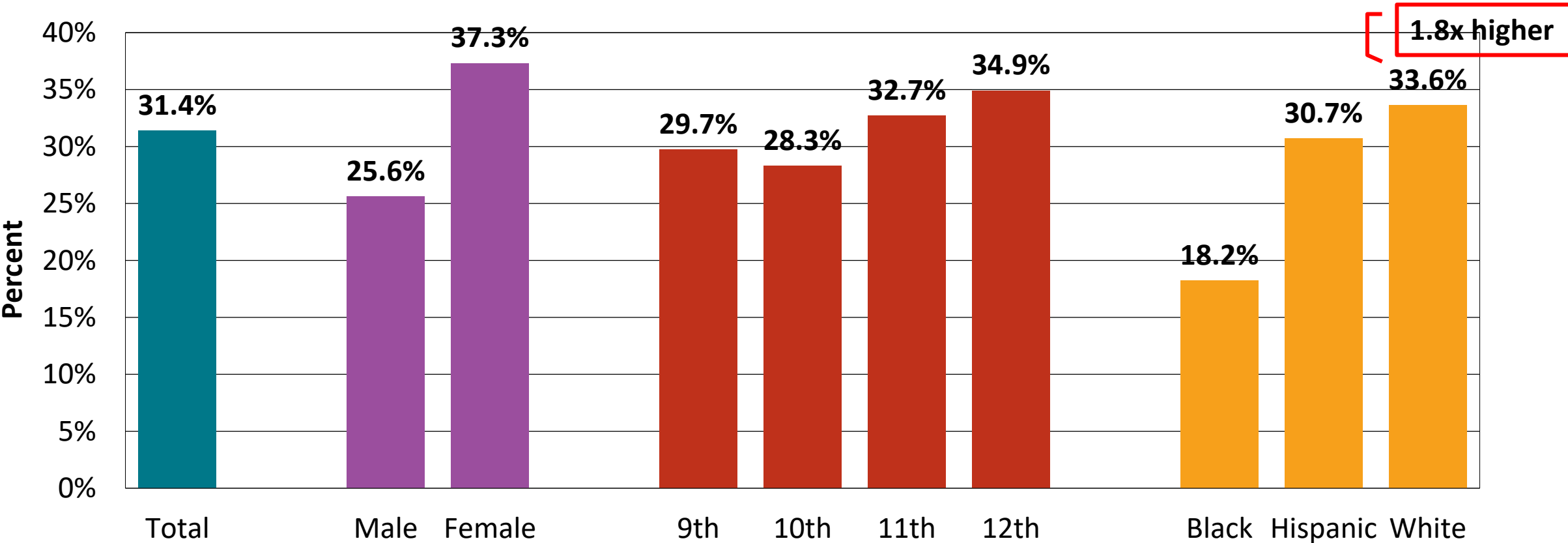
Highest Exposure to Household Mental Illness

- Dorchester
- Kent
- Carroll
- Cecil
- Garrett

Lowest Exposure to Household Mental Illness

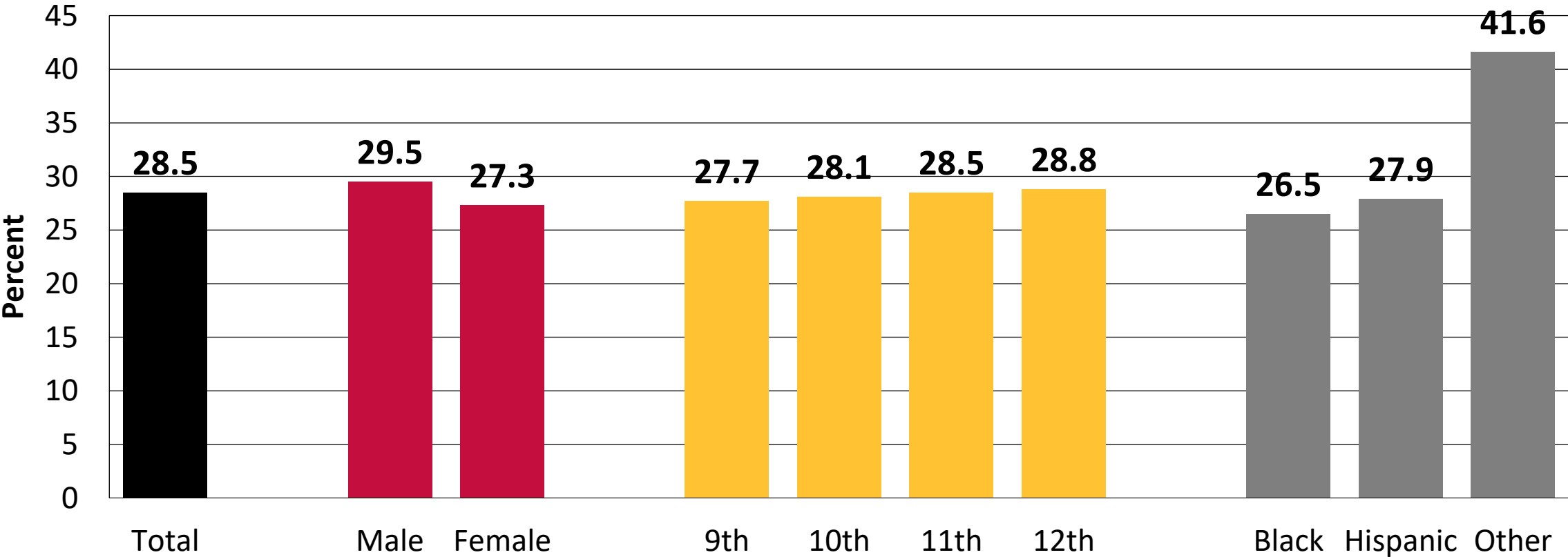
- Prince George's
- Howard
- Montgomery

Percentage of Frederick County HS Students Who Ever Lived with Anyone Who Was Depressed, Mentally Ill, or Suicidal



*F > M; 12th > 9th, 12th > 10th; H > B, W > B (Based on t-test analysis, $p < 0.05$.)
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This graph contains weighted results.

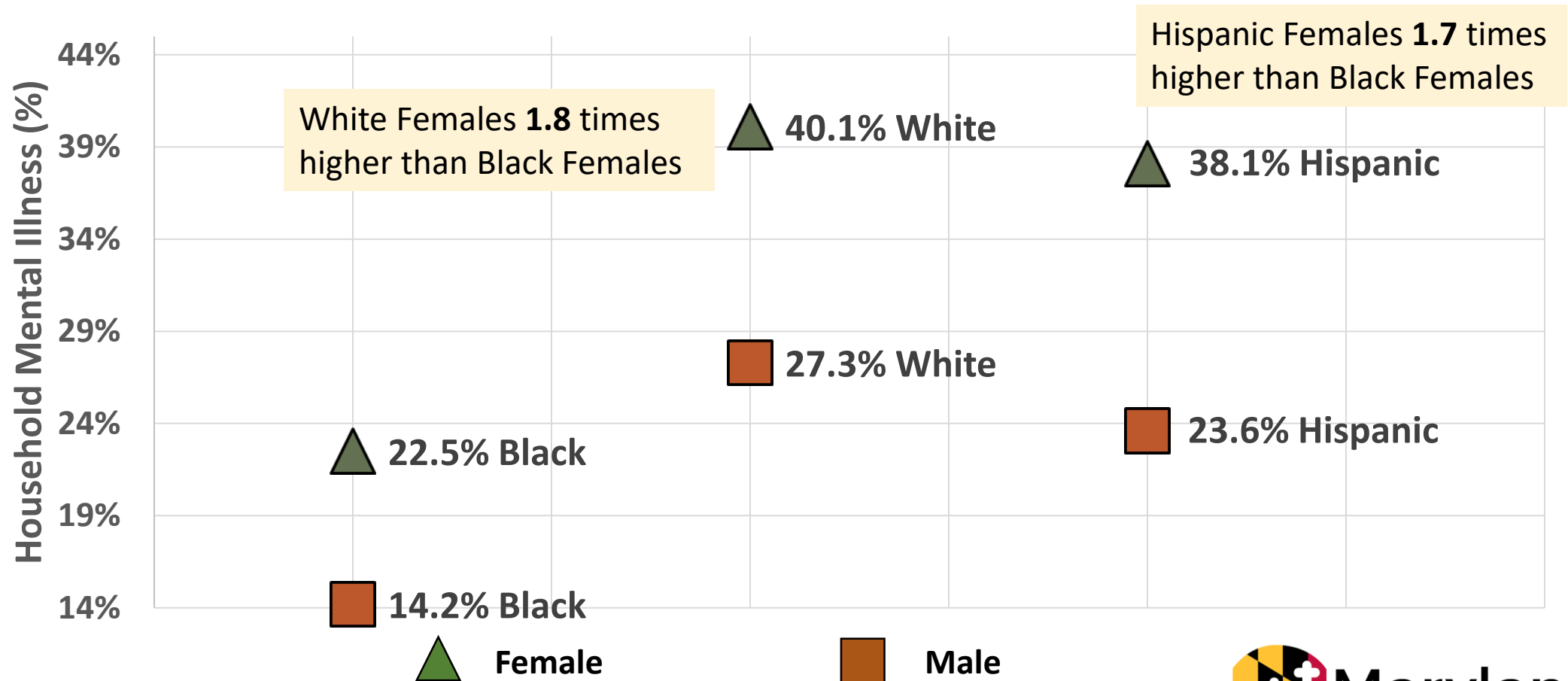
Percentage of Baltimore City HS Students Who Ever Lived with Anyone Who Was Depressed, Mentally Ill, or Suicidal



*O > B; (Based on t-test analysis, $p < 0.05$.)
All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.
This graph contains weighted results.
28 Source: 2018-2019 Maryland HS YRBS/YTS

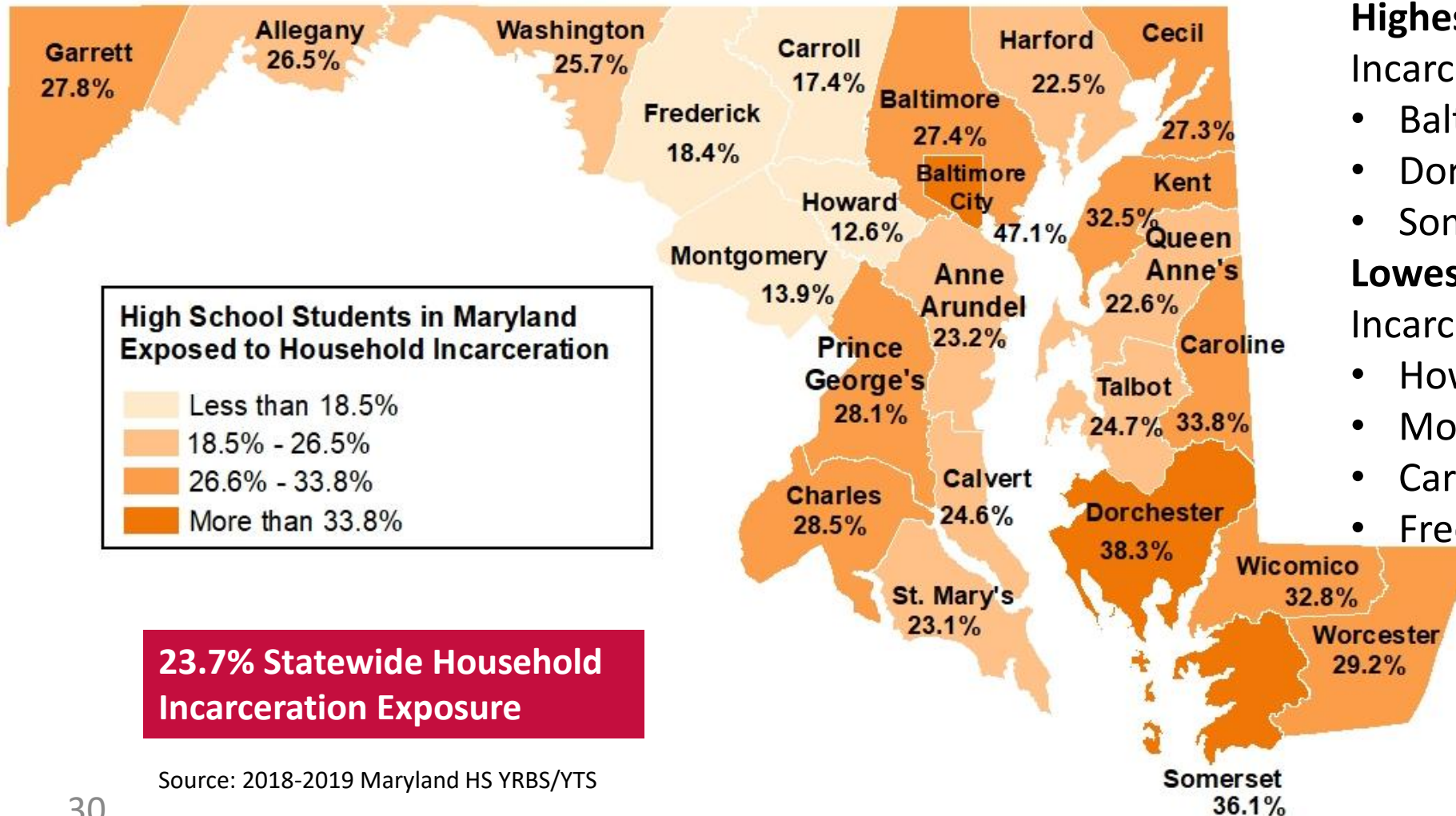


Frederick County HS Students Who Ever Lived with Anyone Who Was Depressed, Mentally Ill, or Suicidal



Source: 2018-2019 Maryland HS YRBS/YTS

MAP: High School Students Who Reported Someone in Their Household Has Ever Gone to Jail or Prison



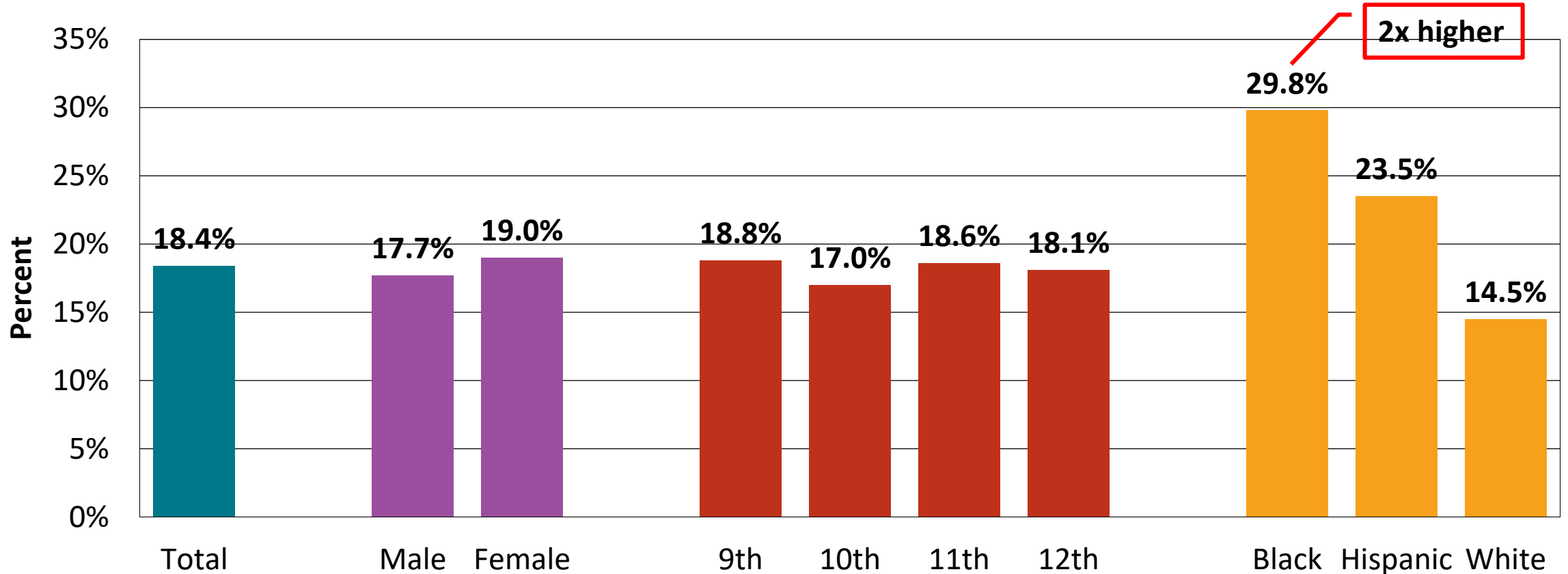
Highest Exposure to Household Incarceration

- Baltimore City
- Dorchester
- Somerset

Lowest Exposure to Household Incarceration

- Howard
- Montgomery
- Carroll
- Frederick

Percentage of Frederick County HS Students Who Reported Someone in Their Household Has Ever Gone to Jail or Prison

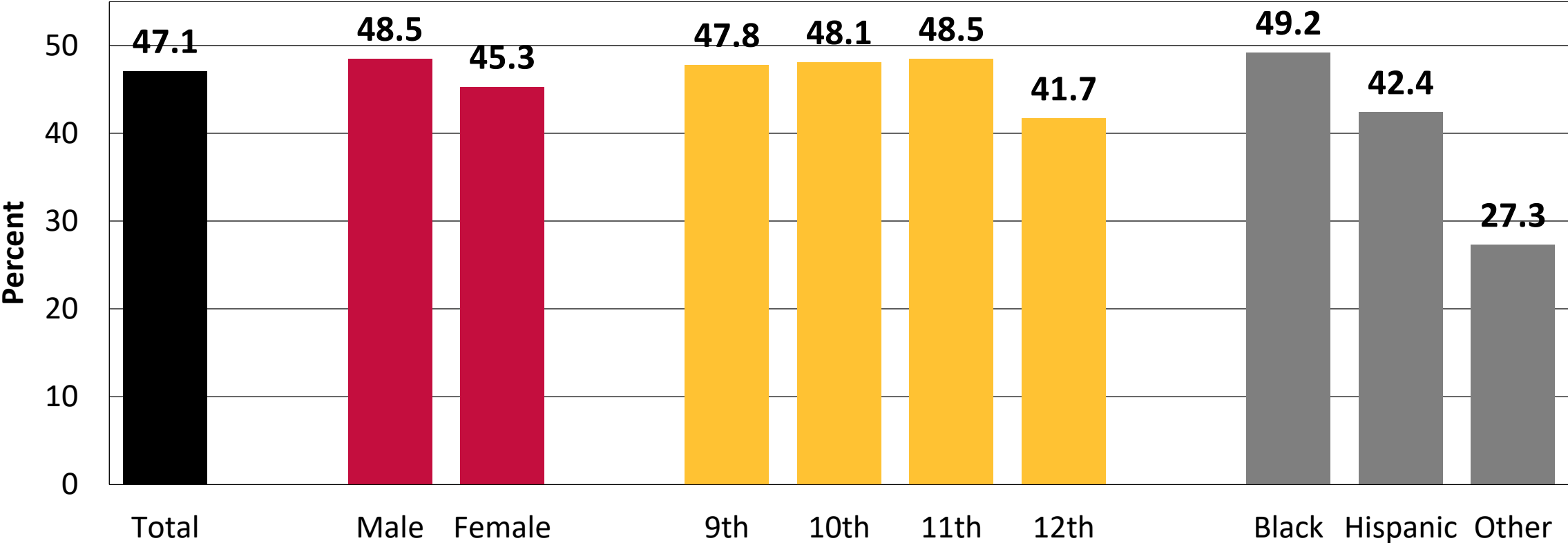


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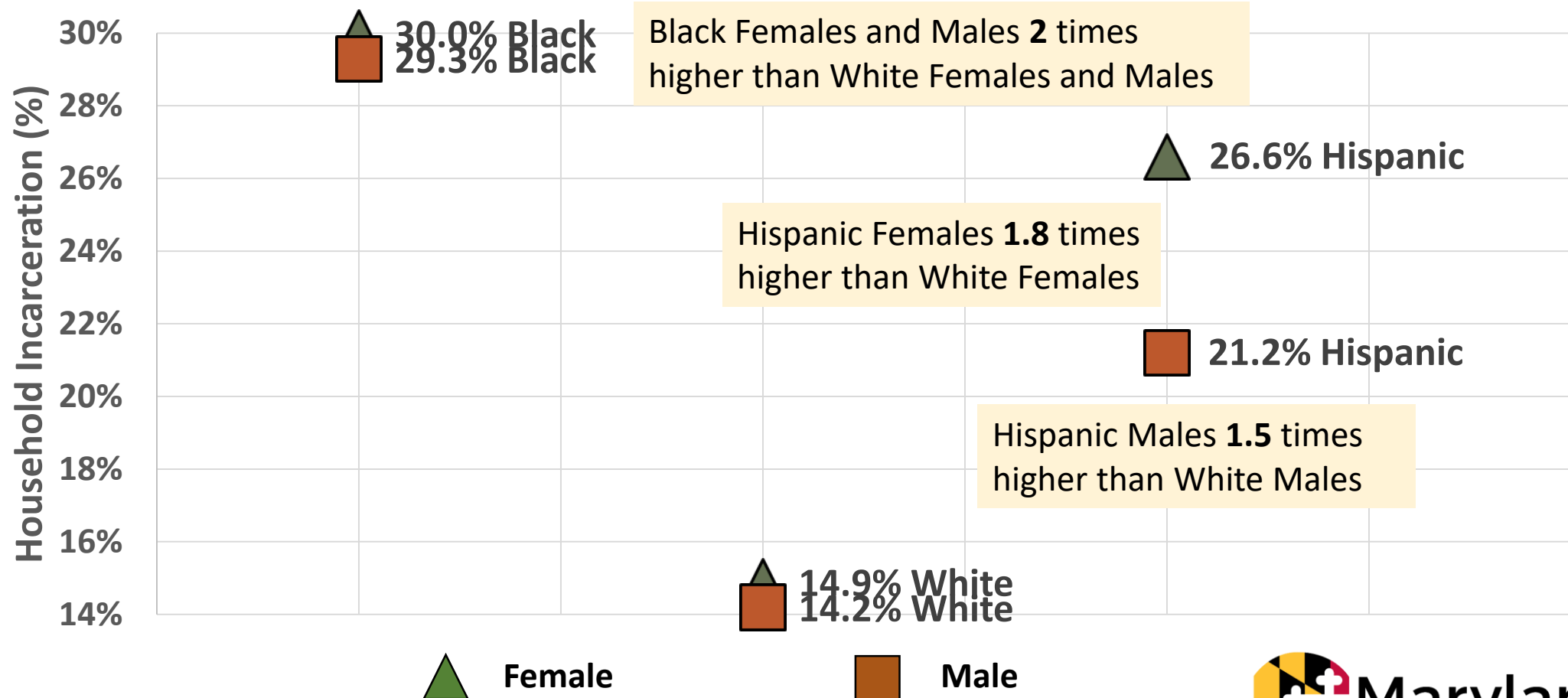
This graph contains weighted results.

Percentage of Baltimore City HS Students Who Reported Someone in Their Household Has Ever Gone to Jail or Prison



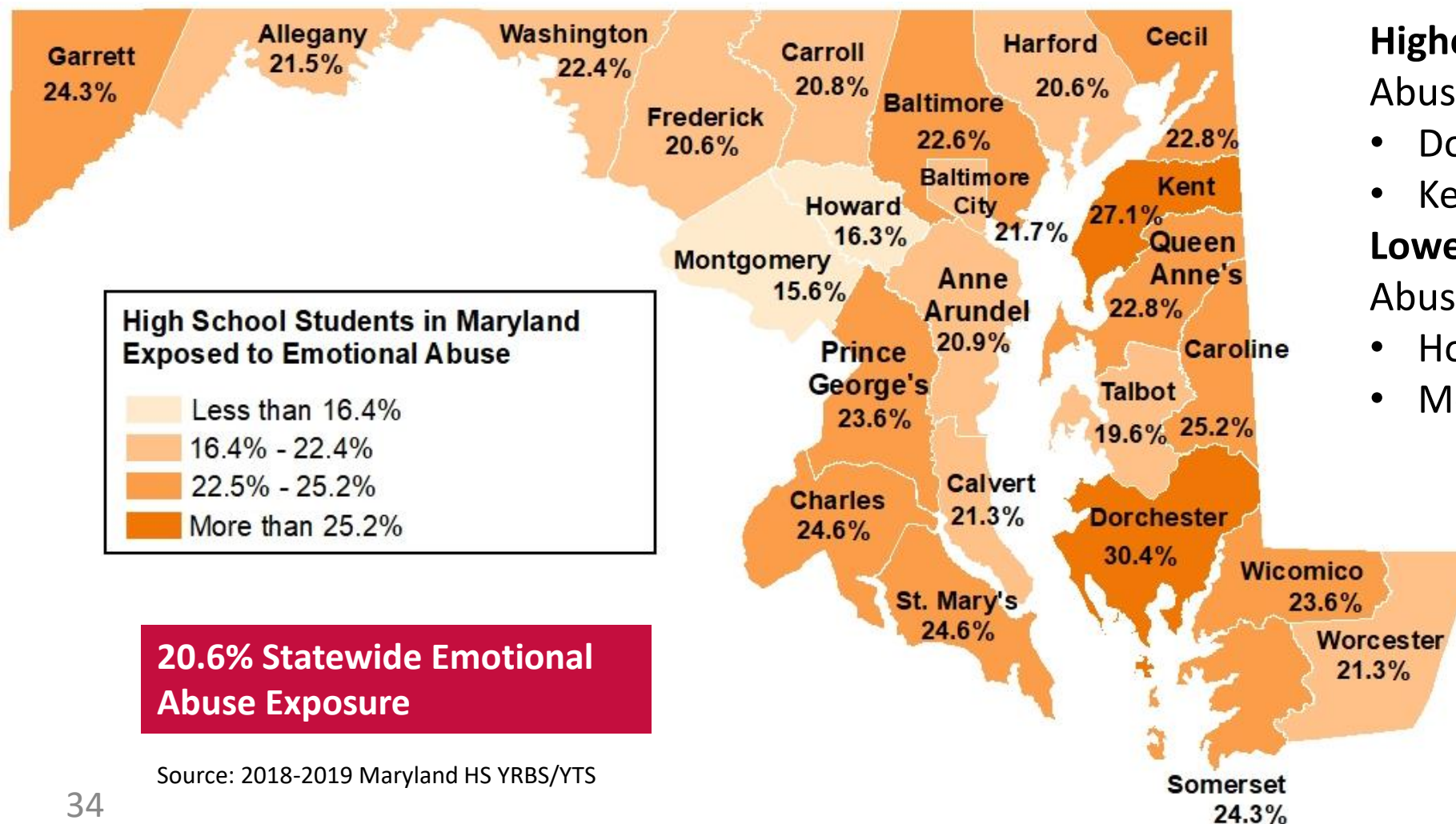
*B > O; (Based on t-test analysis, $p < 0.05$.)
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This graph contains weighted results.

Frederick County HS Students Who Reported Someone in Their Household Has Ever Gone to Jail or Prison



Source: 2018-2019 Maryland HS YRBS/YTS

MAP: High School Students Who Reported a Parent or Other Adult in Their Home Regularly Swears at Them, Insults Them, or Puts Them Down



Highest Exposure to Emotional Abuse

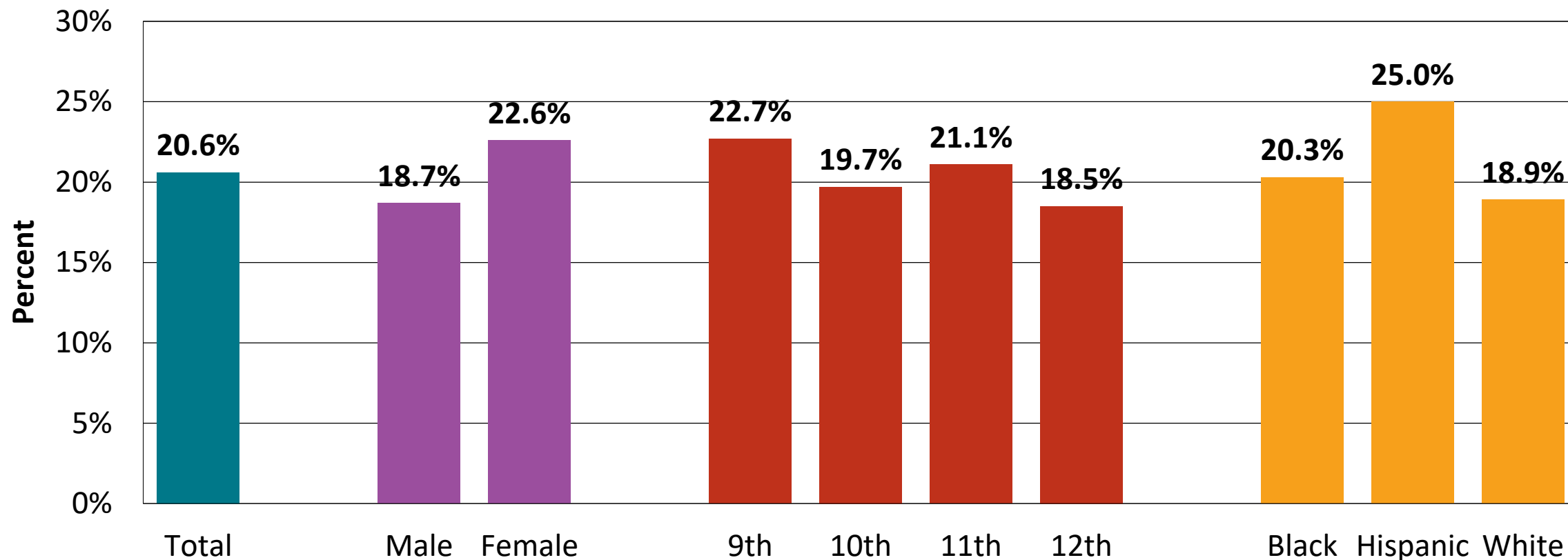
- Dorchester
- Kent

Lowest Exposure to Emotional Abuse

- Howard
- Montgomery

Source: 2018-2019 Maryland HS YRBS/YTS

Percentage of Frederick County HS Students Who Reported a Parent or Other Adult in Their Home Regularly Swears at Them, Insults Them, or Puts Them Down

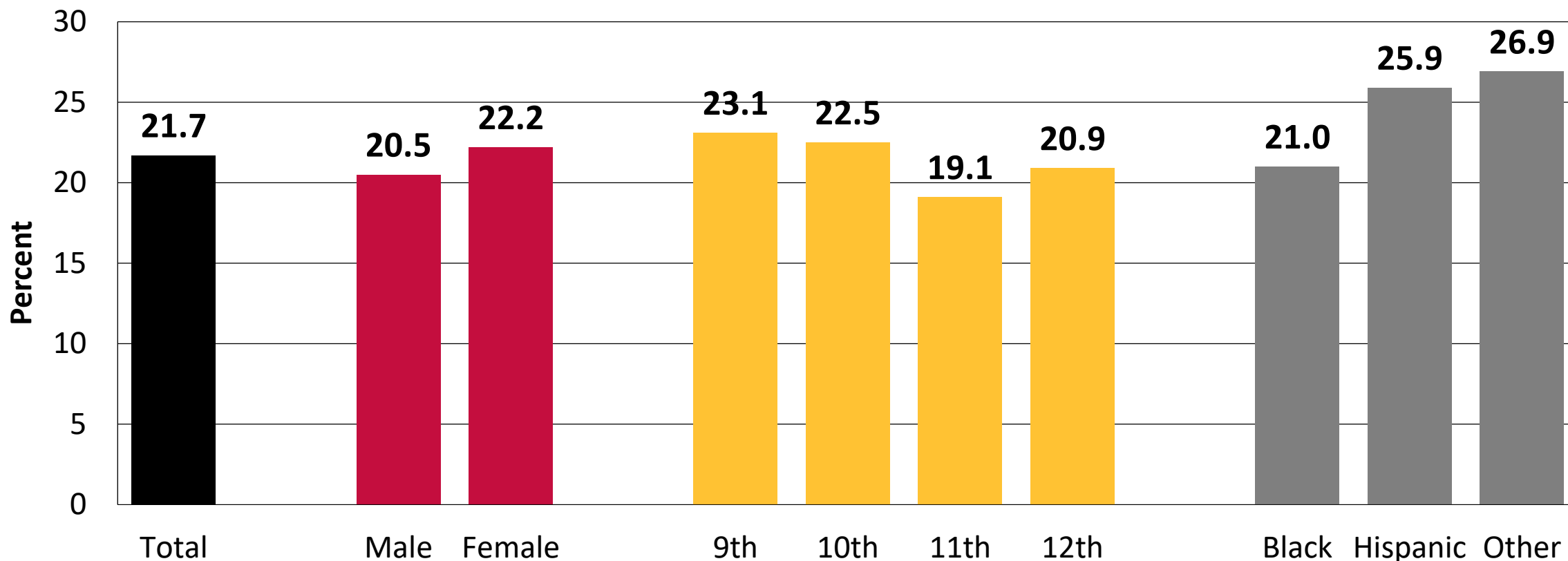


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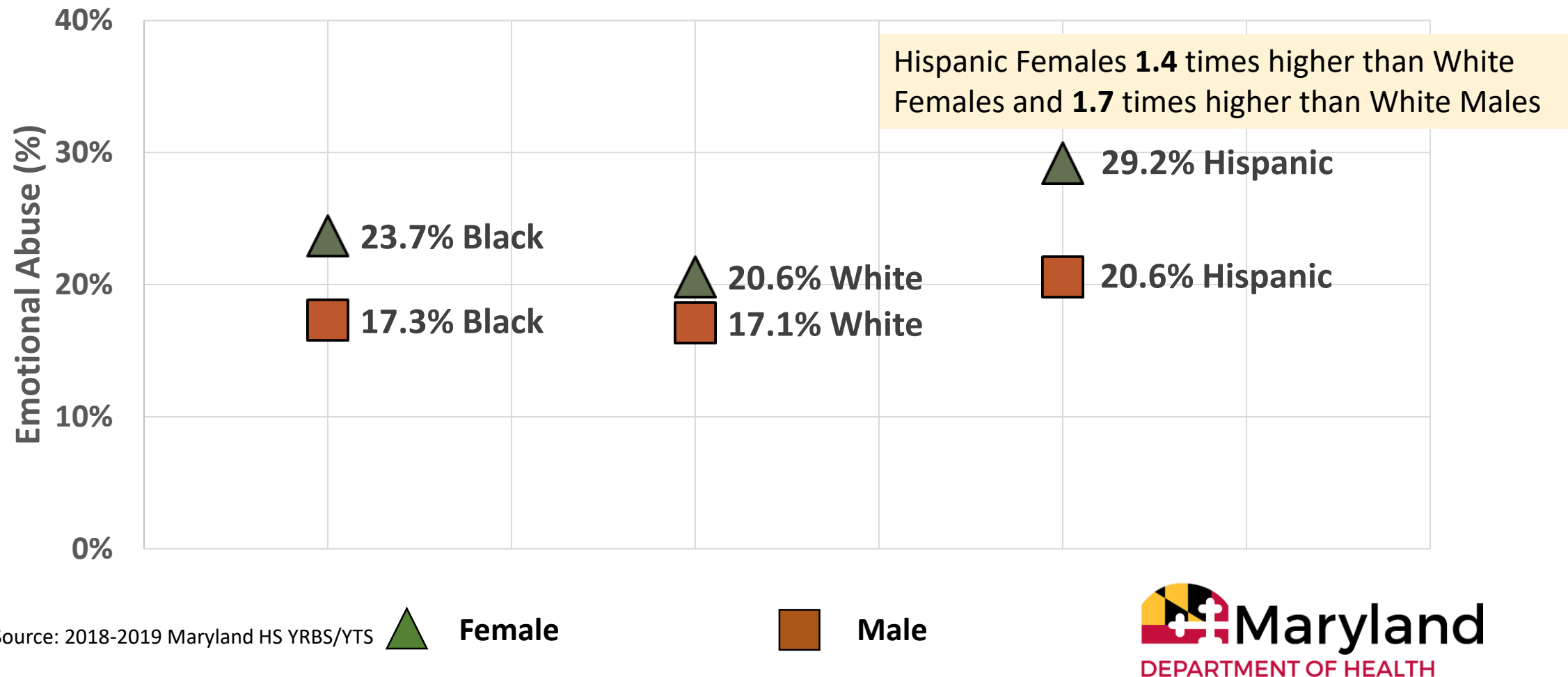
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Percentage of Baltimore City HS Students Who Reported a Parent or Other Adult in Their Home Regularly Swears at Them, Insults Them, or Puts Them Down

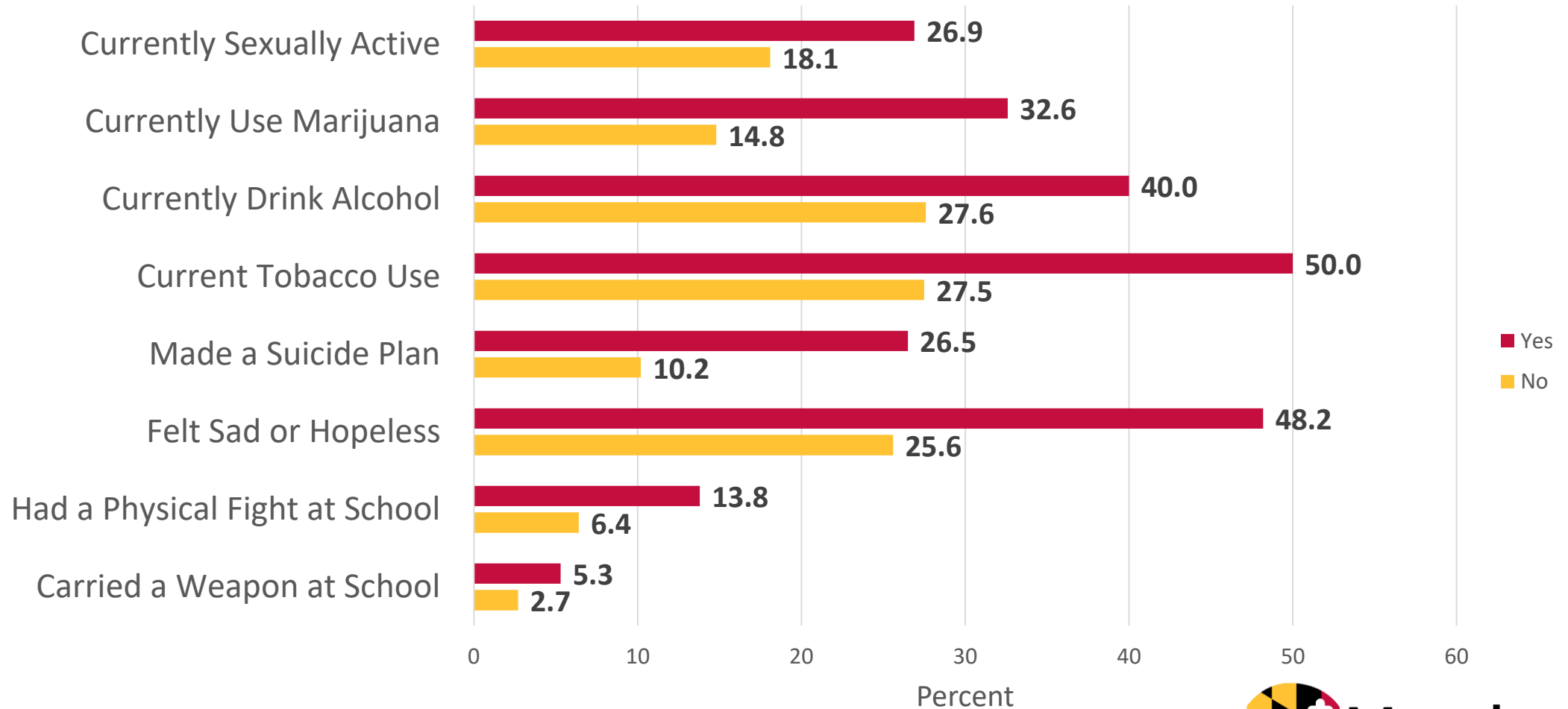


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Frederick County HS Students Who Reported a Parent or Other Adult in Their Home Regularly Swears at Them, Insults Them, or Puts Them Down

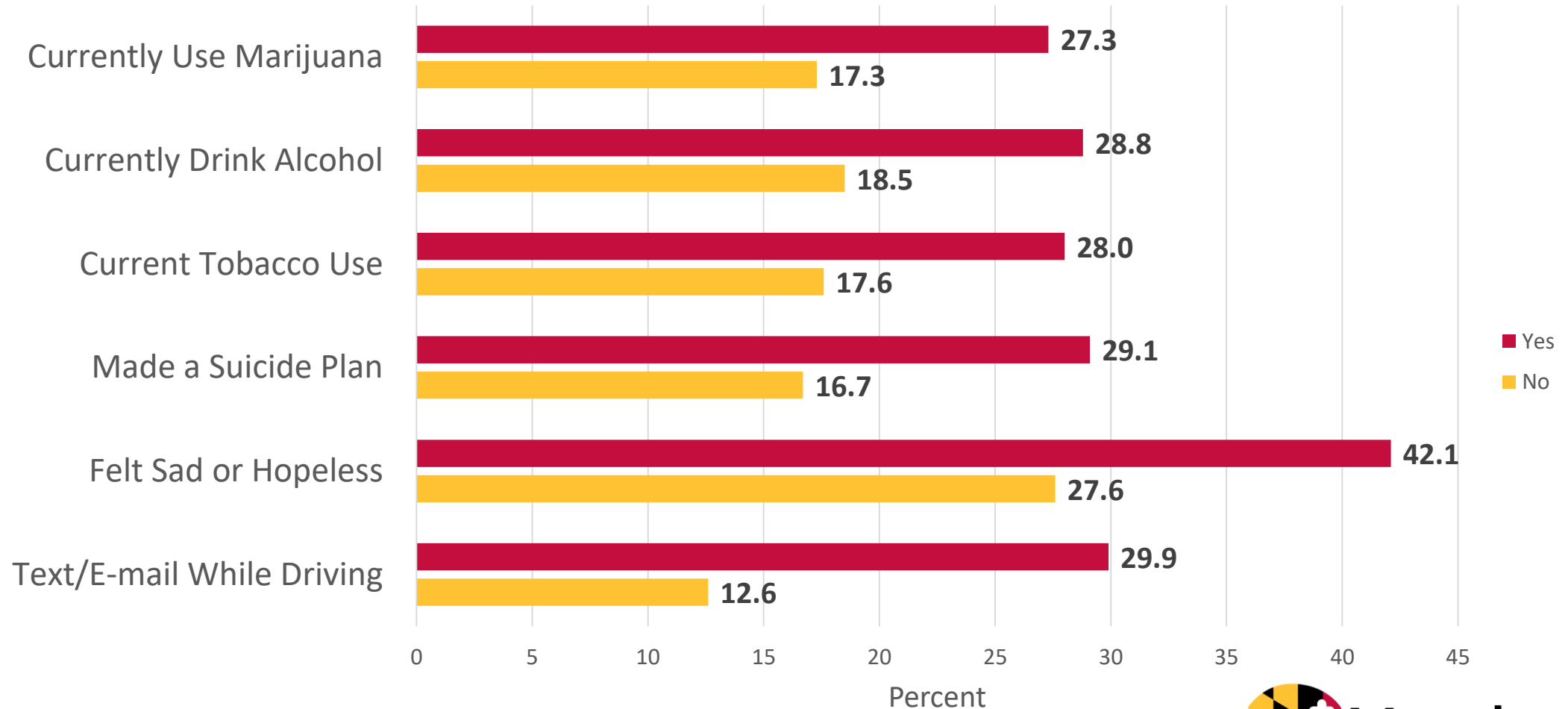


Frederick County HS Students Exposed to Household Substance Abuse



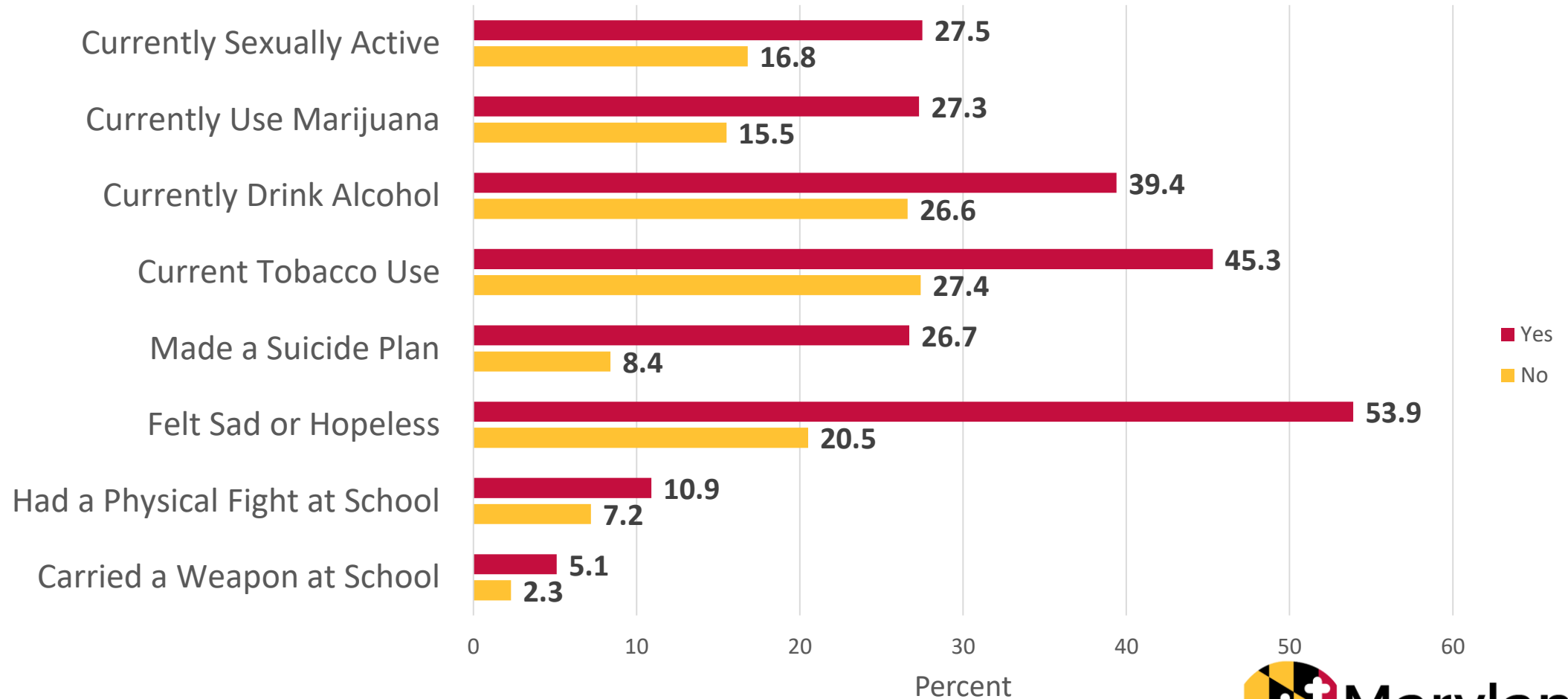
Source: 2018-2019 Maryland HS YRBS/YTS

Baltimore City HS Students Exposed to Household Substance Abuse



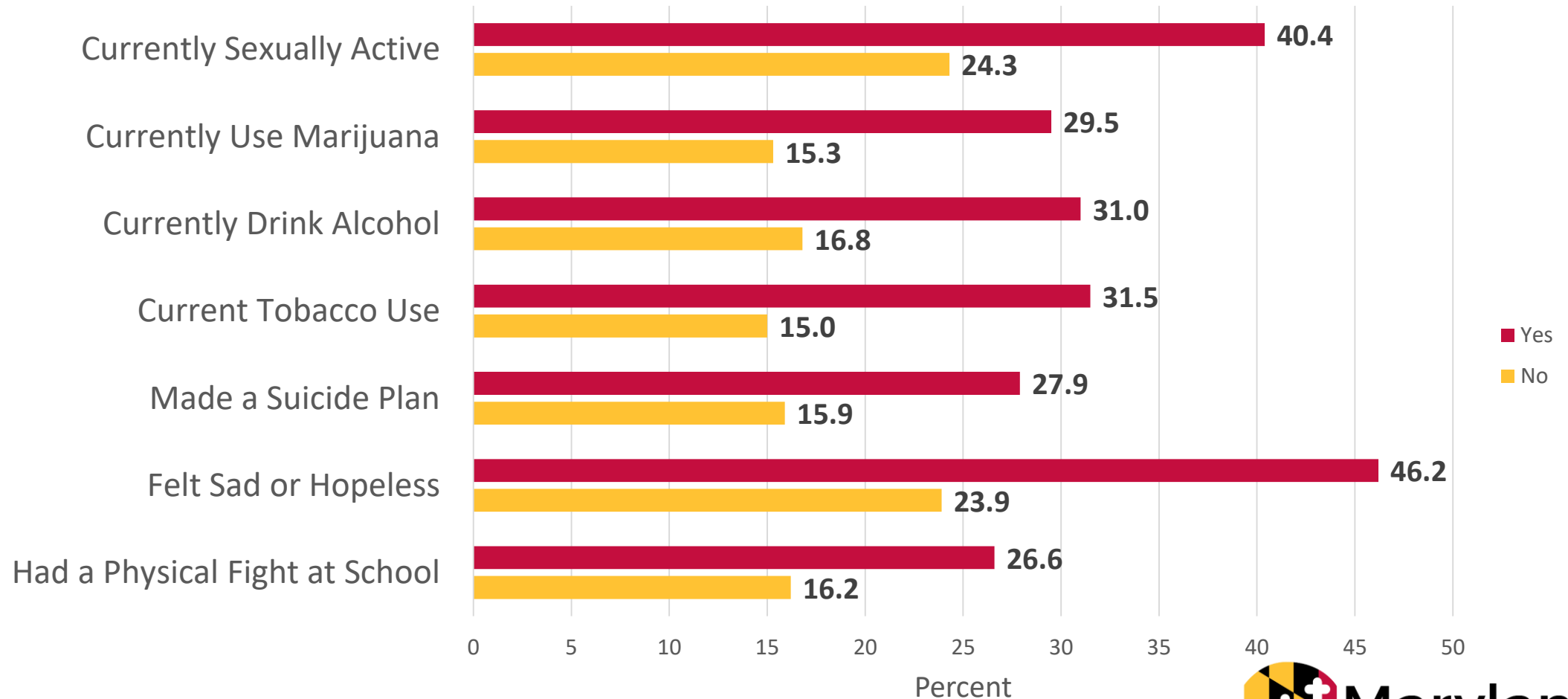
Source: 2018-2019 Maryland HS YRBS/YTS

Frederick County HS Students Exposed to Household Mental Illness



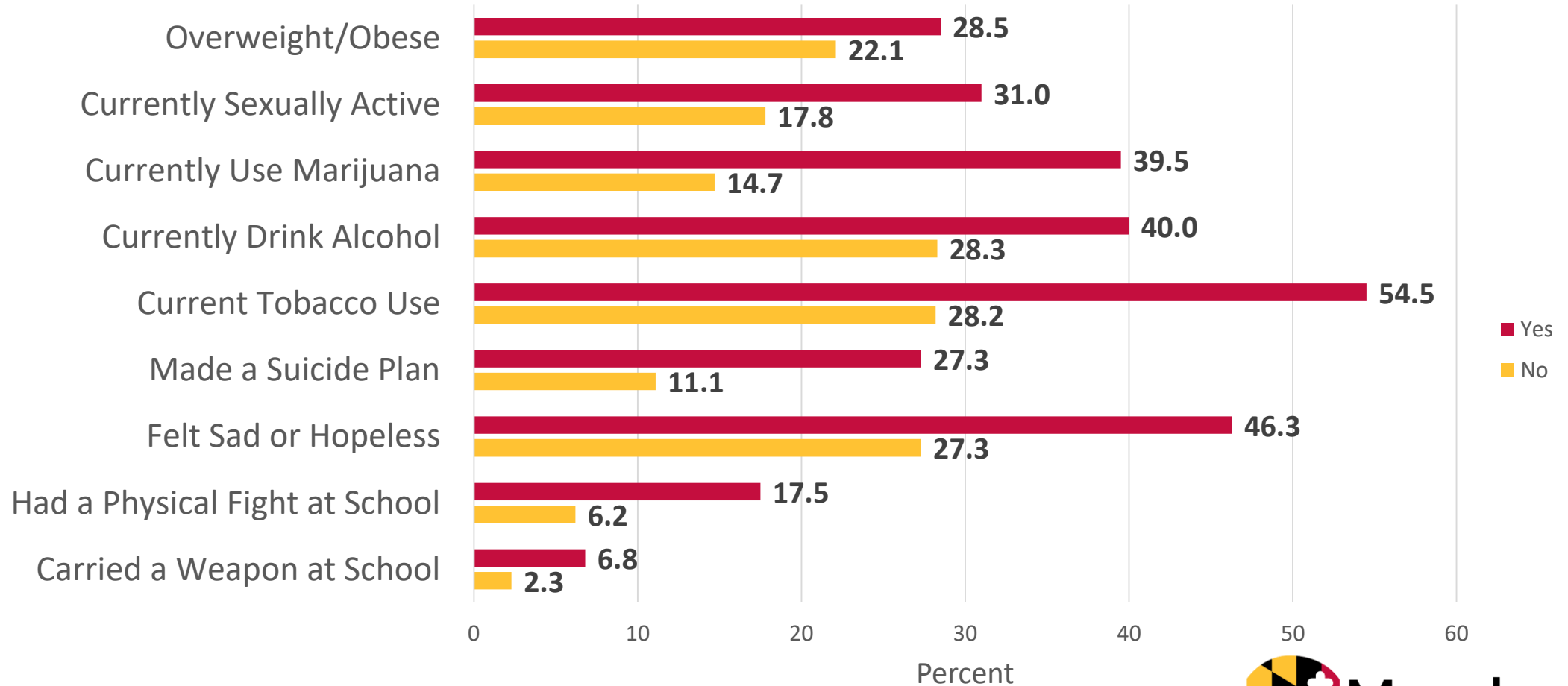
Source: 2018-2019 Maryland HS YRBS/YTS

Baltimore City HS Students Exposed to Household Mental Illness



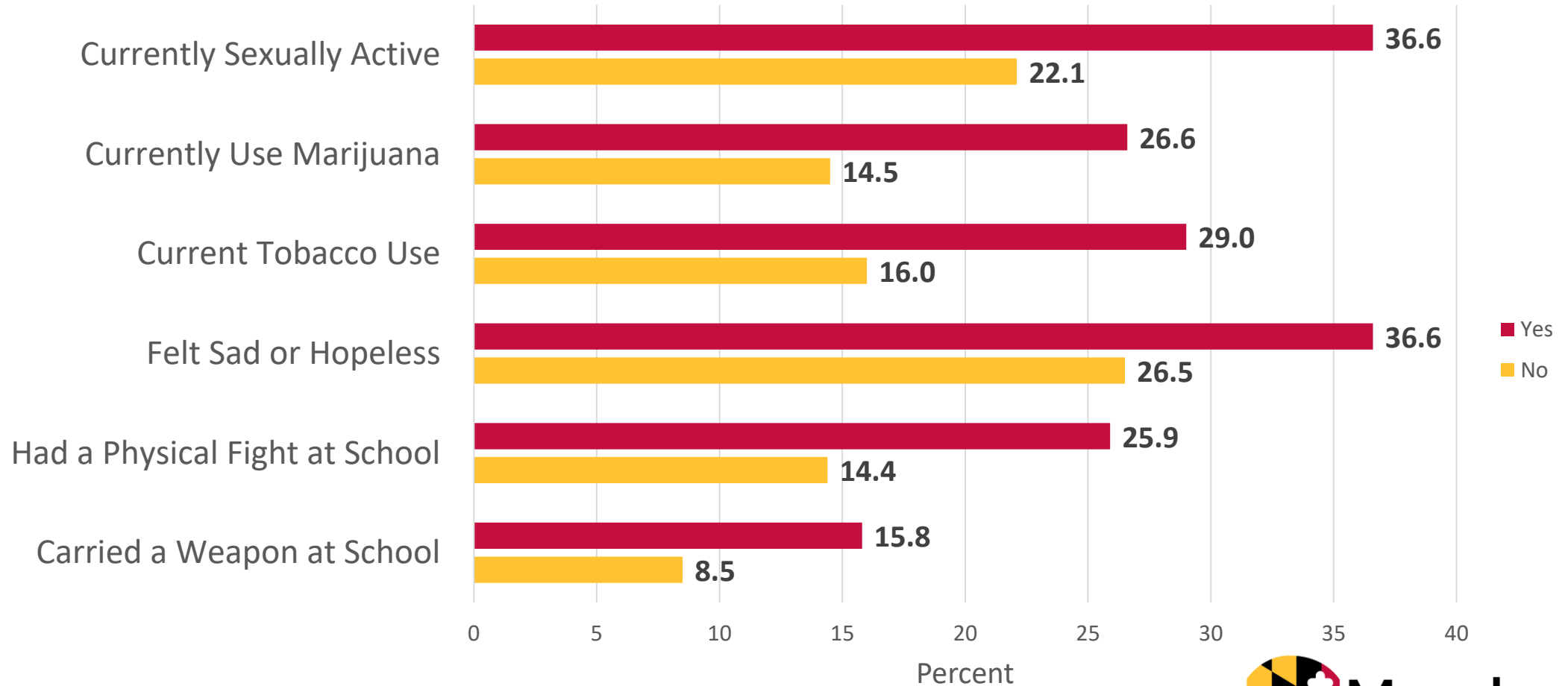
Source: 2018-2019 Maryland HS YRBS/YTS

Frederick County HS Students Exposed to Household Incarceration



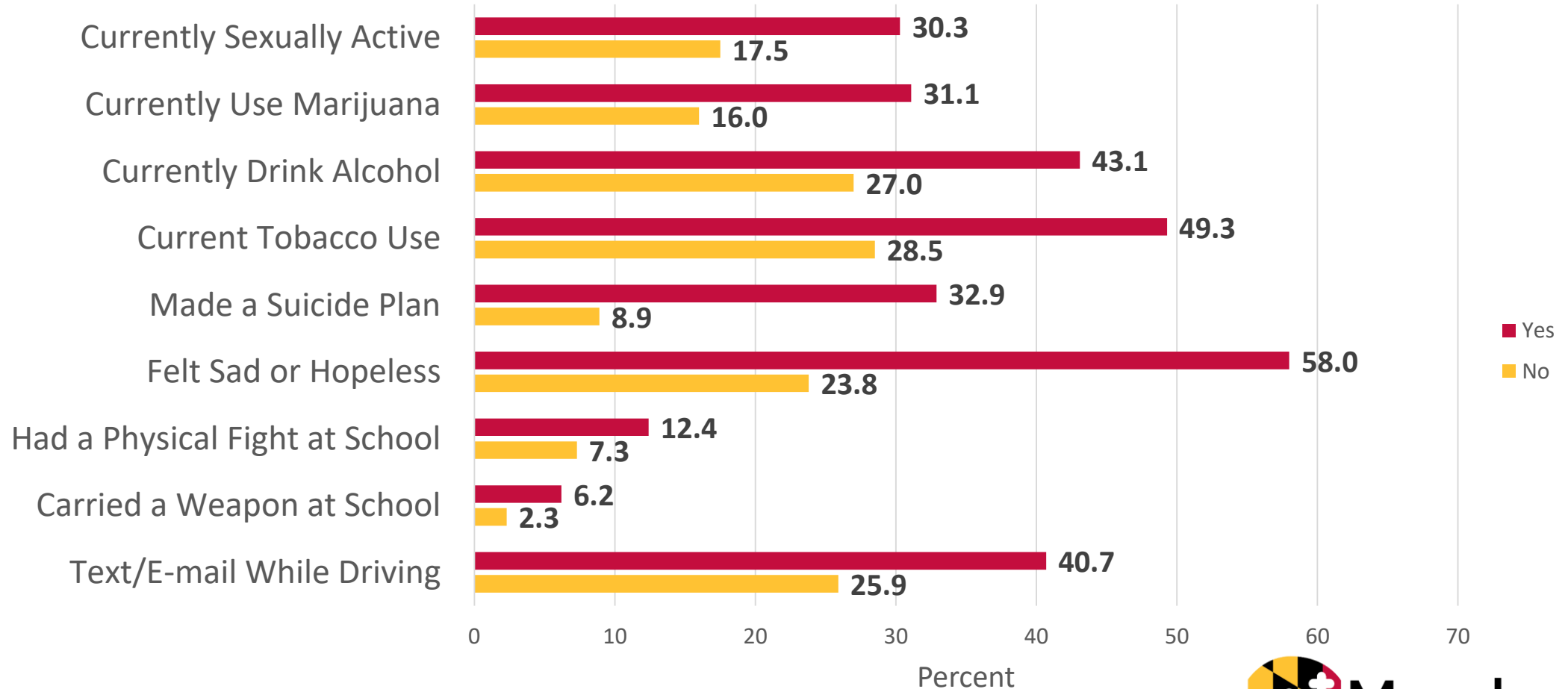
Source: 2018-2019 Maryland HS YRBS/YTS

Baltimore City HS Students Exposed to Household Incarceration



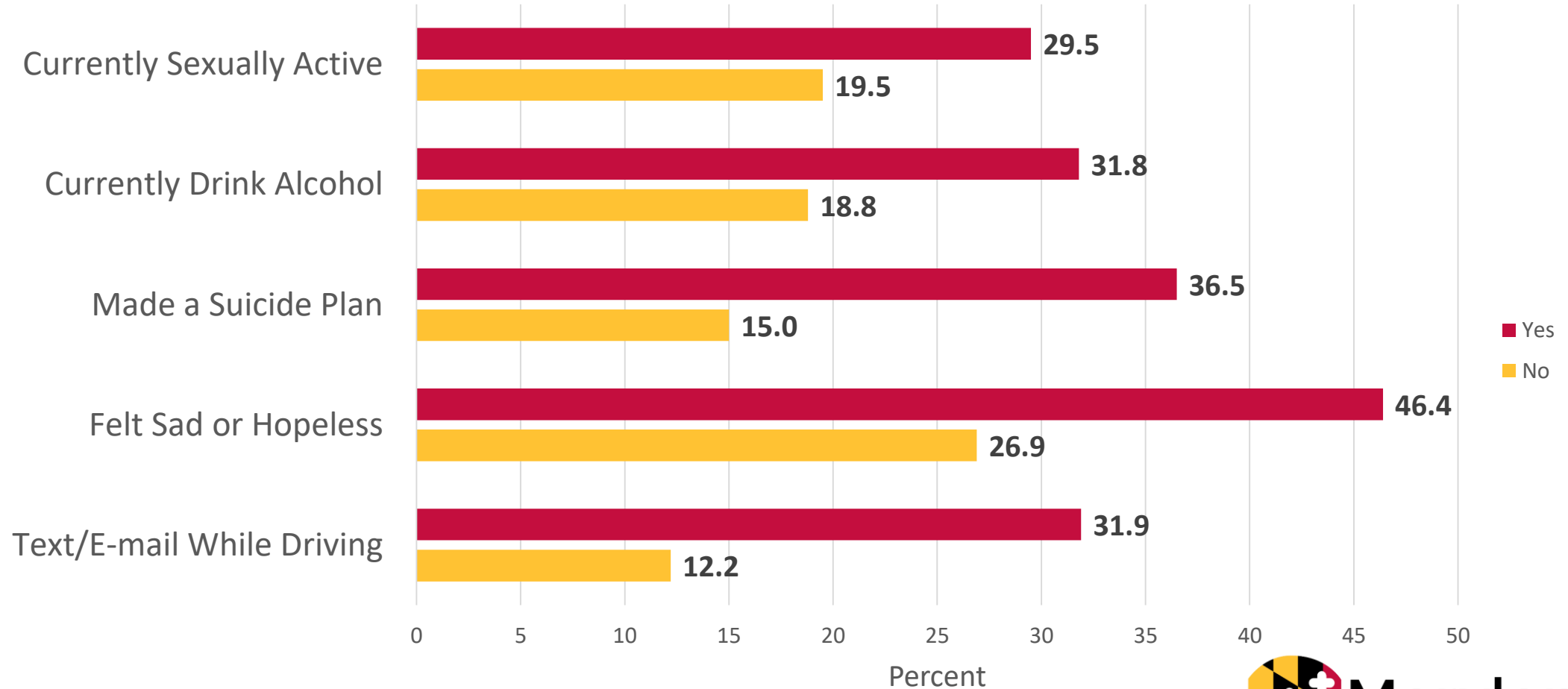
Source: 2018-2019 Maryland HS YRBS/YTS

Frederick County HS Students Exposed to Emotional Abuse



Source: 2018-2019 Maryland HS YRBS/YTS

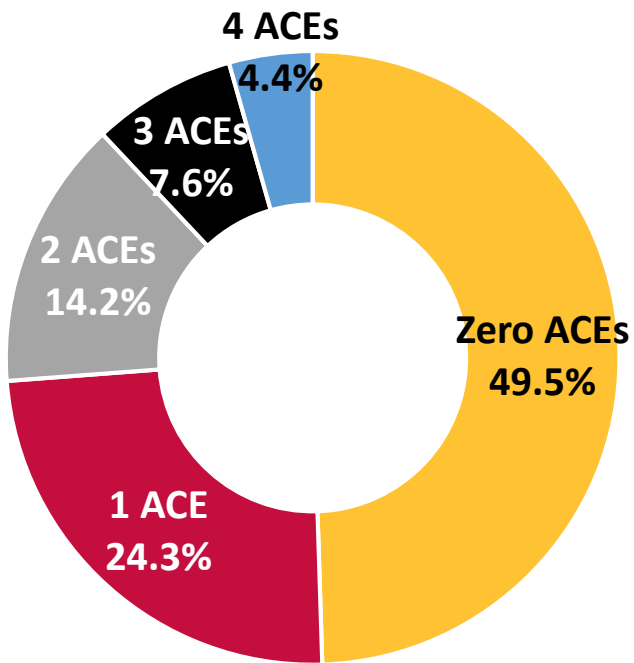
Baltimore City HS Students Exposed to Emotional Abuse



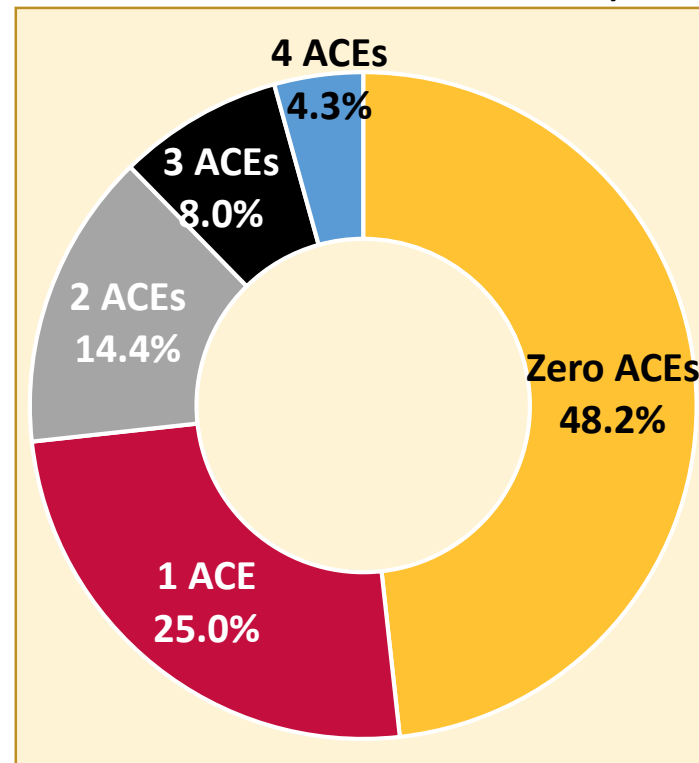
Source: 2018-2019 Maryland HS YRBS/YTS

Dose-Response Relationship- Frederick County (1)

Distribution of Measured ACEs
Among Frederick County High School Youth



Overall Distribution in Maryland

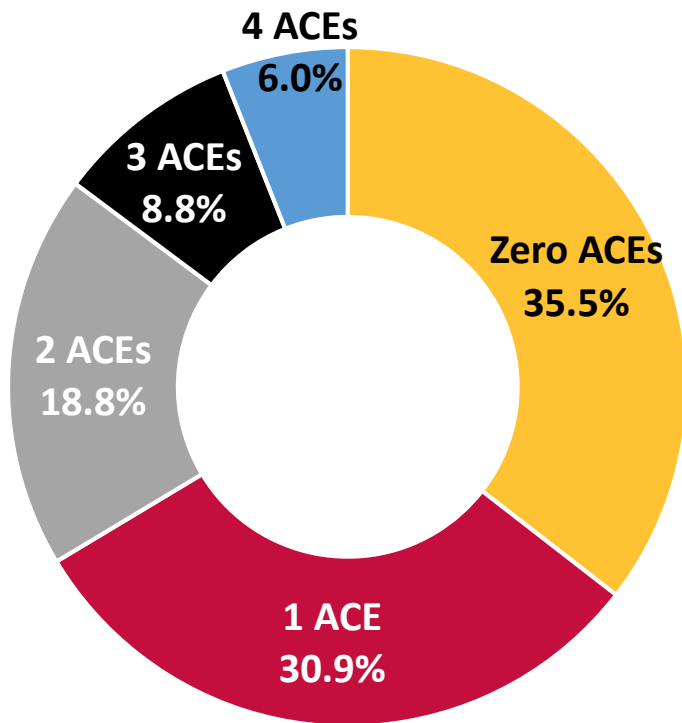


- About 1 in 2 Frederick County High School students were exposed to the measured ACEs
- A quarter of students had experienced 1 ACE
- A dose-response relationship exists when it comes to exposure to ACE's and engagement in youth risk behaviors
- The more ACEs students are exposed to, the more likely they are engaged in certain risk behavior

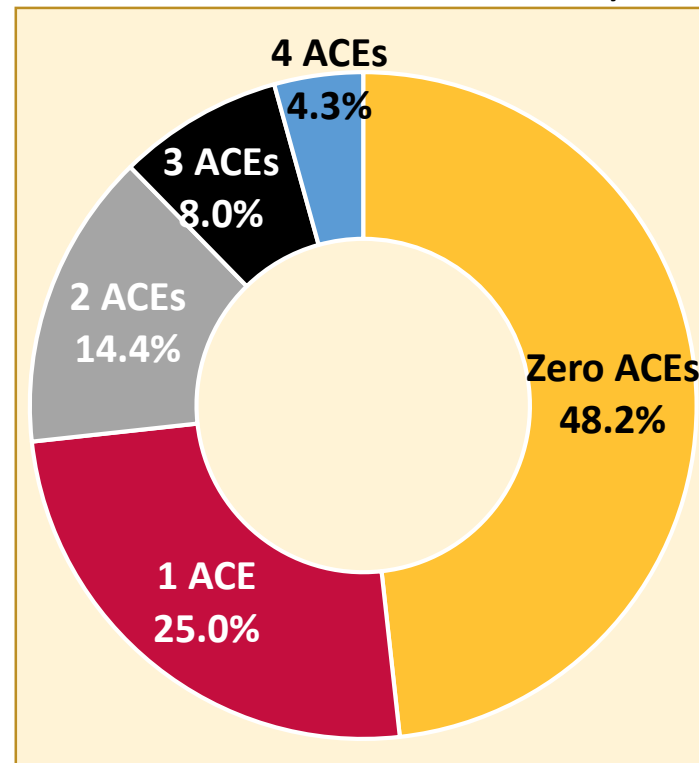
Source: 2018-2019 Maryland HS YRBS/YTS

Dose-Response Relationship - Baltimore City (1)

Distribution of Measured ACEs
Among **Baltimore City** High School Youth



Overall Distribution in Maryland

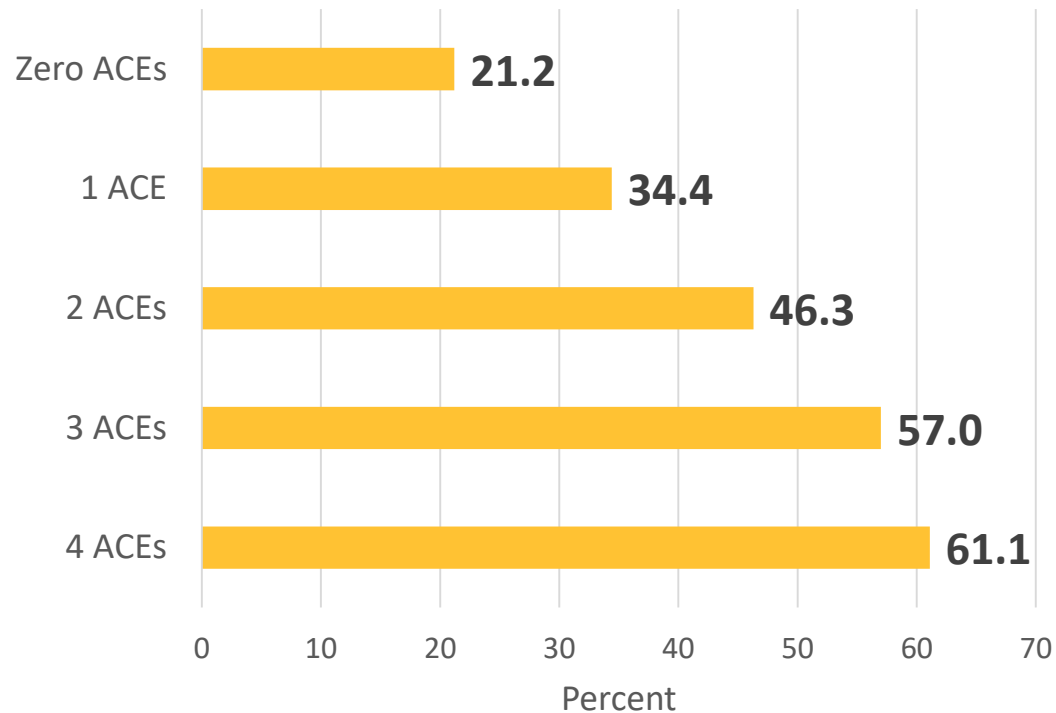


Source: 2018-2019 Maryland HS YRBS/YTS

- About 65% of Baltimore City High School students were exposed to the measured ACEs **(Compare to 52% Statewide)**
- About 1/3 of Baltimore City students had experienced 1 ACE
- A dose-response relationship exists when it comes to exposure to ACE's and engagement in youth risk behaviors
- The more ACEs students are exposed to, the more likely they are engaged in certain risk behavior

Dose-Response Relationship- Frederick County (2)

Current Tobacco Use



Odds of Tobacco Use By ACE Score

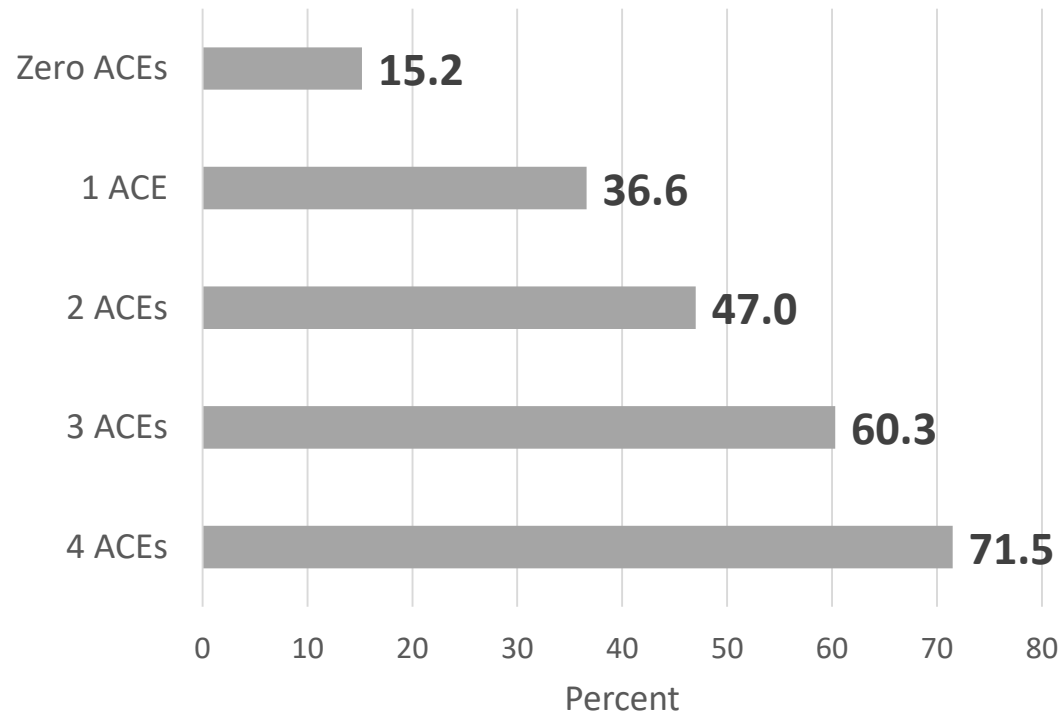
ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	1.9
2 ACEs	3.1
3 ACEs	4.8
4 ACEs	5.9

*Adjusted OR: race, age, and sex

Source: 2018-2019 Maryland HS YRBS/YTS

Dose-Response Relationship- Frederick County (3)

Felt Sad or Hopeless



Odds of Feeling Sad or Hopeless By ACE Score

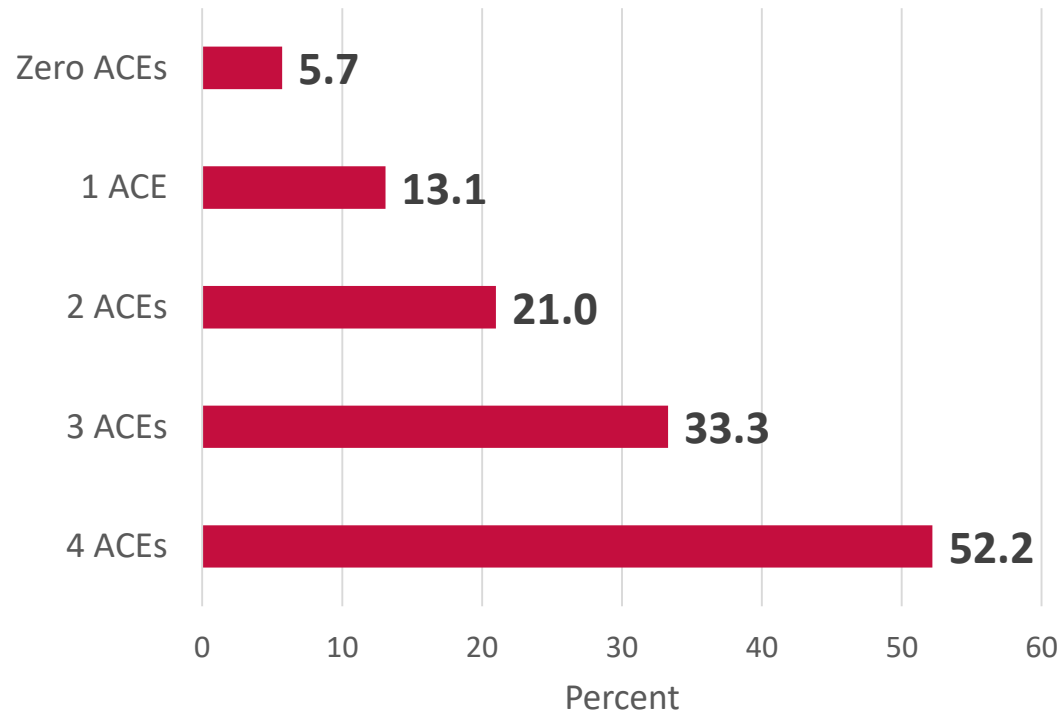
ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	3.1
2 ACEs	5.0
3 ACEs	8.2
4 ACEs	13.9

*Adjusted OR: race, age, and sex

Source: 2018-2019 Maryland HS YRBS/YTS

Dose-Response Relationship- Frederick County (4)

Made a Suicide Plan



Odds of Making a Suicide Plan By ACE Score

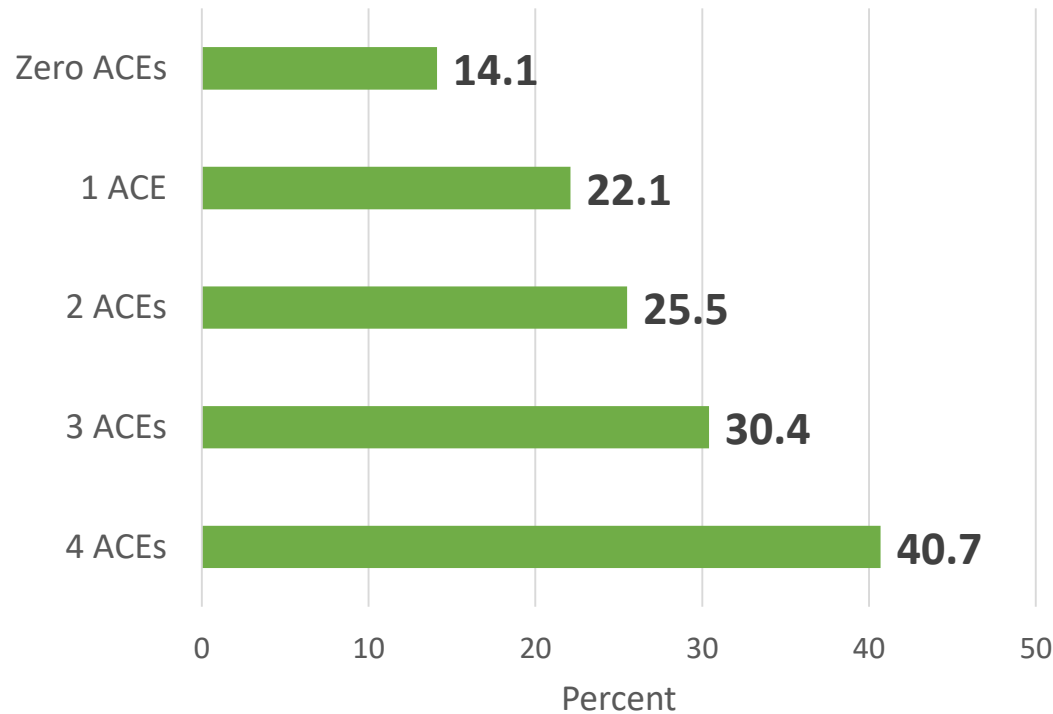
ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	2.4
2 ACEs	4.5
3 ACEs	7.8
4 ACEs	17.4

*Adjusted OR: race, age, and sex

Source: 2018-2019 Maryland HS YRBS/YTS

Dose-Response Relationship- Frederick County (5)

Currently Sexually Active



Odds of Current Sexual Activity By ACE Score

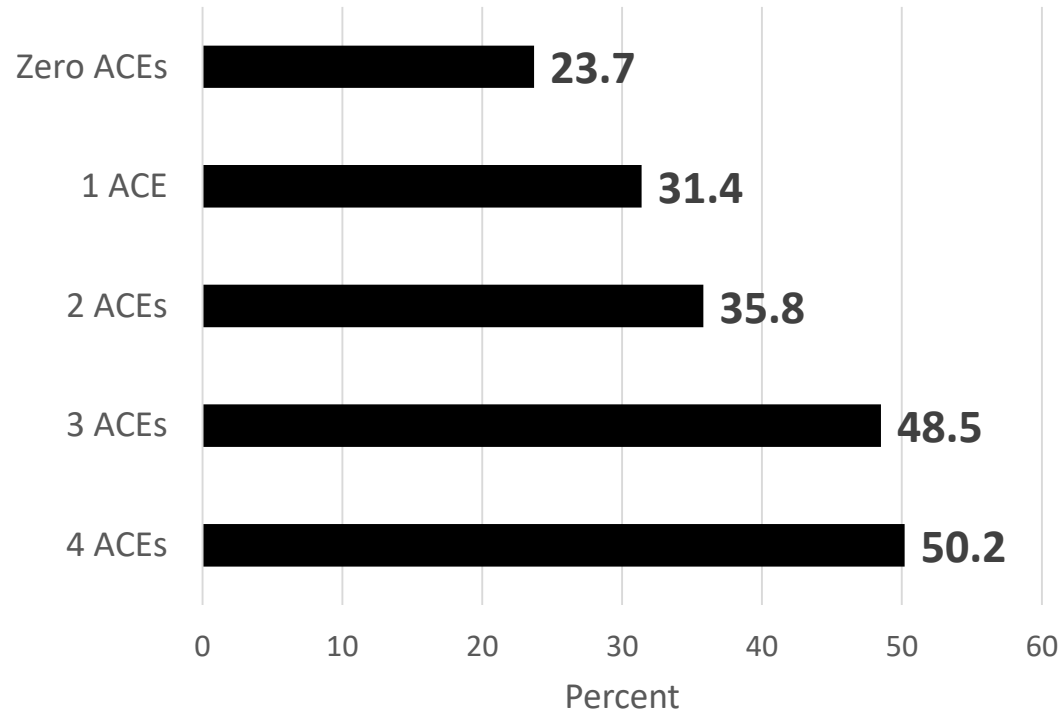
ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	1.8
2 ACEs	2.2
3 ACEs	2.7
4 ACEs	4.5

*Adjusted OR: race, age, and sex

Source: 2018-2019 Maryland HS YRBS/YTS

Dose-Response Relationship- Frederick County (6)

Current Alcohol Use



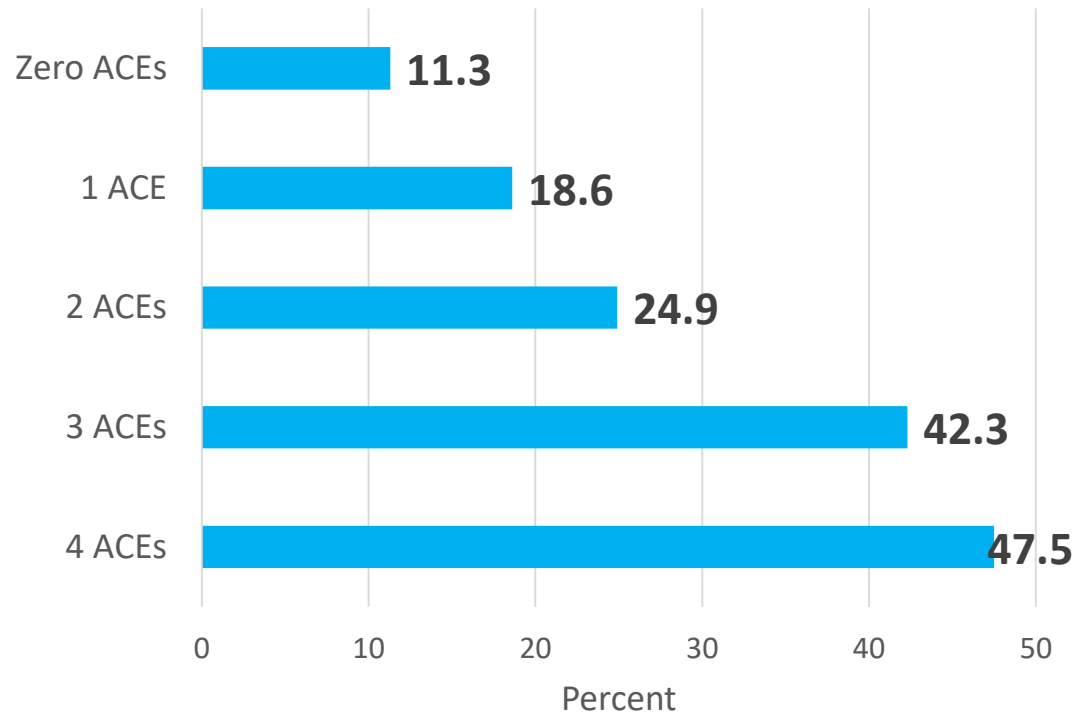
Odds of Current Alcohol Use By ACE Score

ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	1.4
2 ACEs	1.6
3 ACEs	2.9
4 ACEs	3.3

*Adjusted OR: race, age, and sex

Dose-Response Relationship- Frederick County (7)

Current Marijuana Use



Odds of Current Marijuana Use By ACE Score

ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	1.9
2 ACEs	2.7
3 ACEs	6.1
4 ACEs	8.4

*Adjusted OR: race, age, and sex

Source: 2018-2019 Maryland HS YRBS/YTS

Dose-Response Relationship - Baltimore City (8)

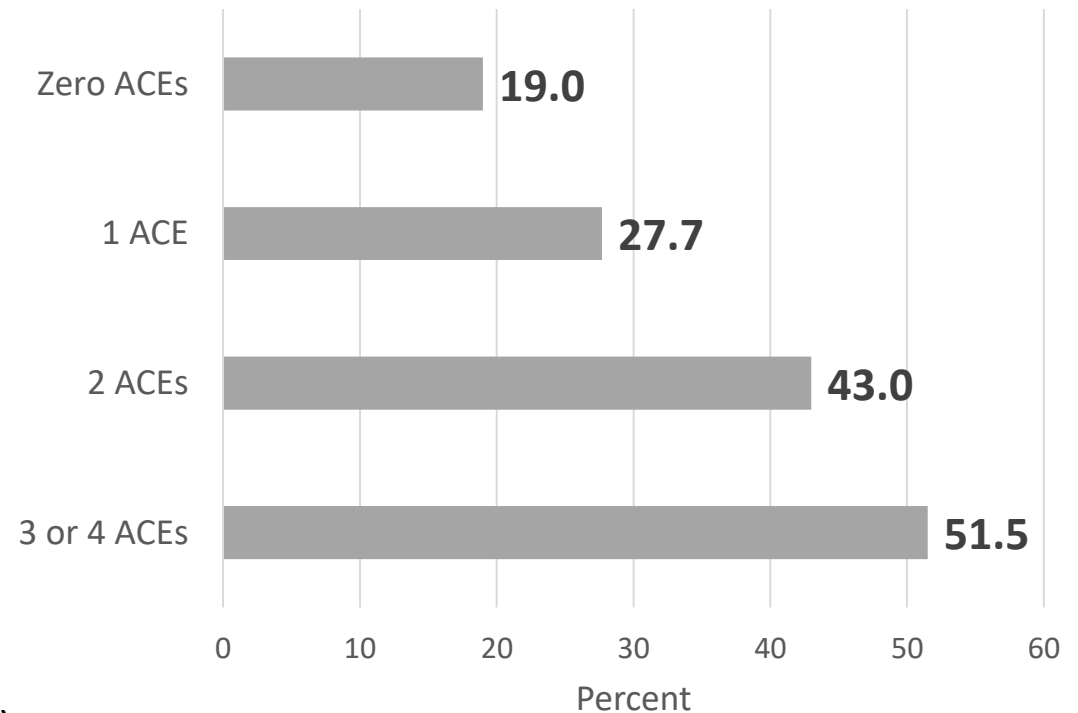
Odds of Feeling Sad or Hopeless By ACE Score

ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	1.7*
2 ACEs	3.6*
3 or 4 ACEs	5.0*

Adjusted OR: race, age, and sex

*Significant difference from reference group (zero ACEs)

Felt Sad or Hopeless



Dose-Response Relationship - Baltimore City (9)

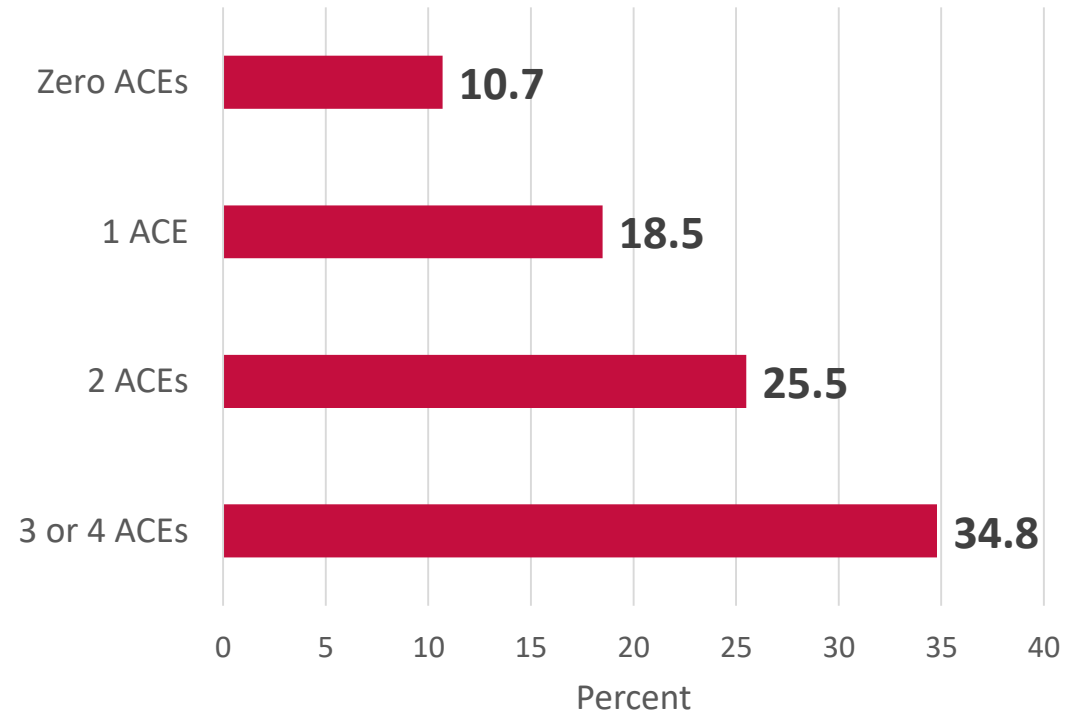
Odds of Making a Suicide Plan By ACE Score

ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	2.0*
2 ACEs	3.2*
3 or 4 ACEs	4.1*

Adjusted OR: race, age, and sex

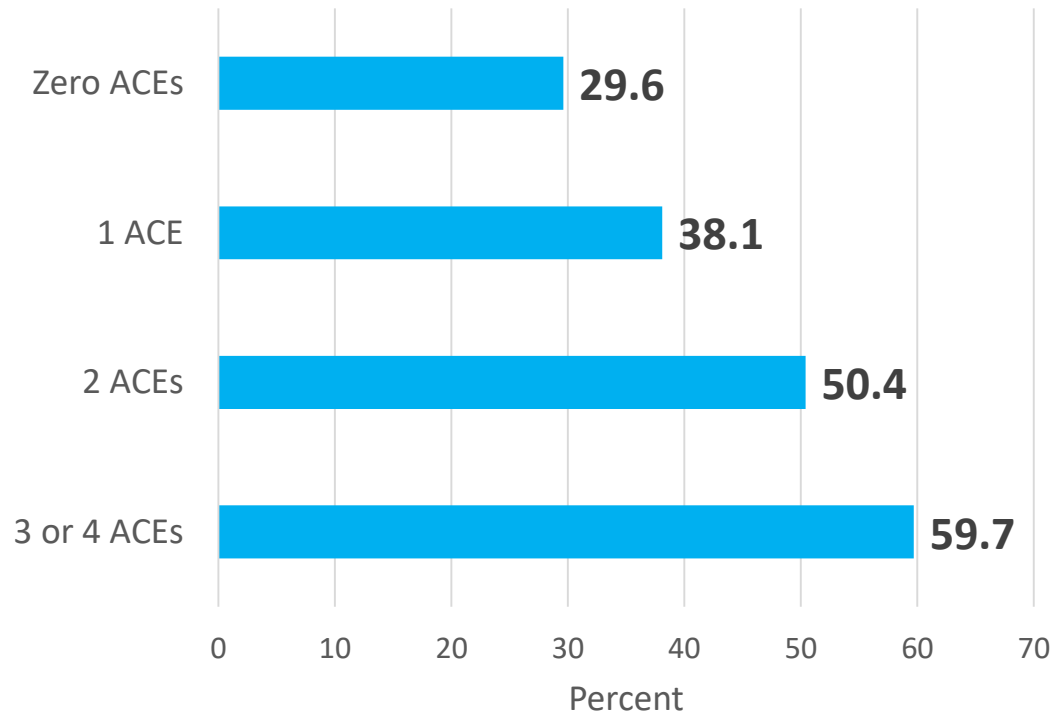
*Significant difference from reference group (zero ACEs)

Made a Suicide Plan



Dose-Response Relationship - Baltimore City (10)

Ever Sexual Intercourse



Odds of Ever Sexual Intercourse By ACE Score

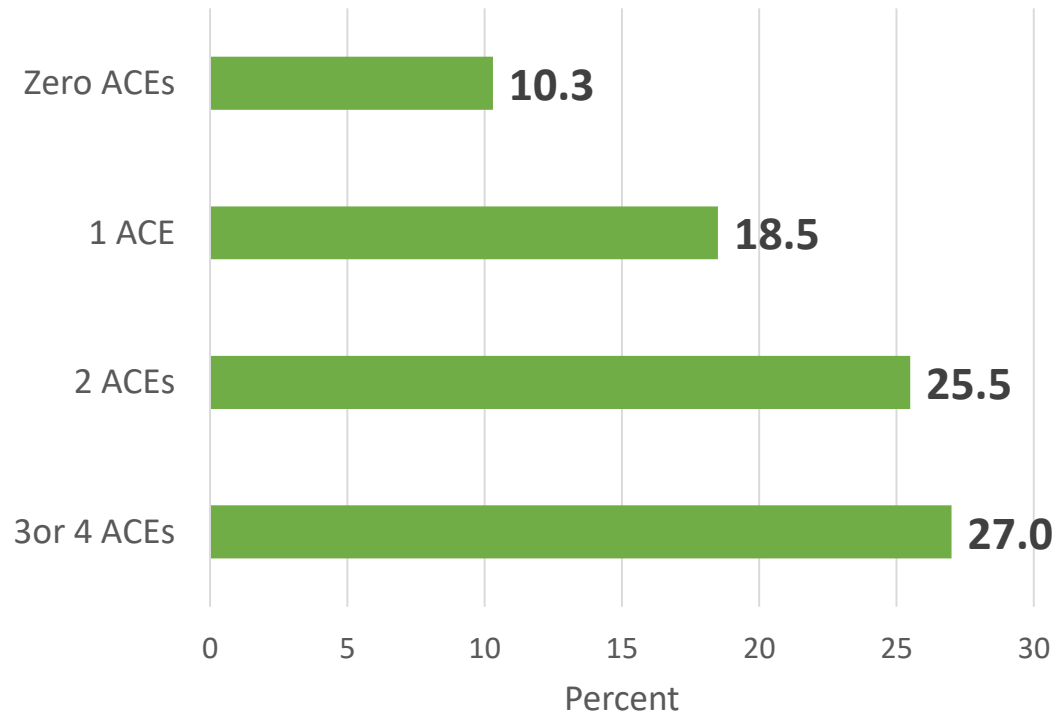
ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	1.4
2 ACEs	3.0*
3 or 4 ACEs	5.0*

Adjusted OR: race, age, and sex

*Significant difference from reference group (zero ACEs)

Dose-Response Relationship - Baltimore City (11)

Physical Fight on School Property



Physical Fight on School Property By ACE Score

ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	1.9*
2 ACEs	2.9*
3 or 4 ACEs	3.2*

Adjusted OR: race, age, and sex

*Significant difference from reference group (zero ACEs)

Dose-Response Relationship - Baltimore City (12)

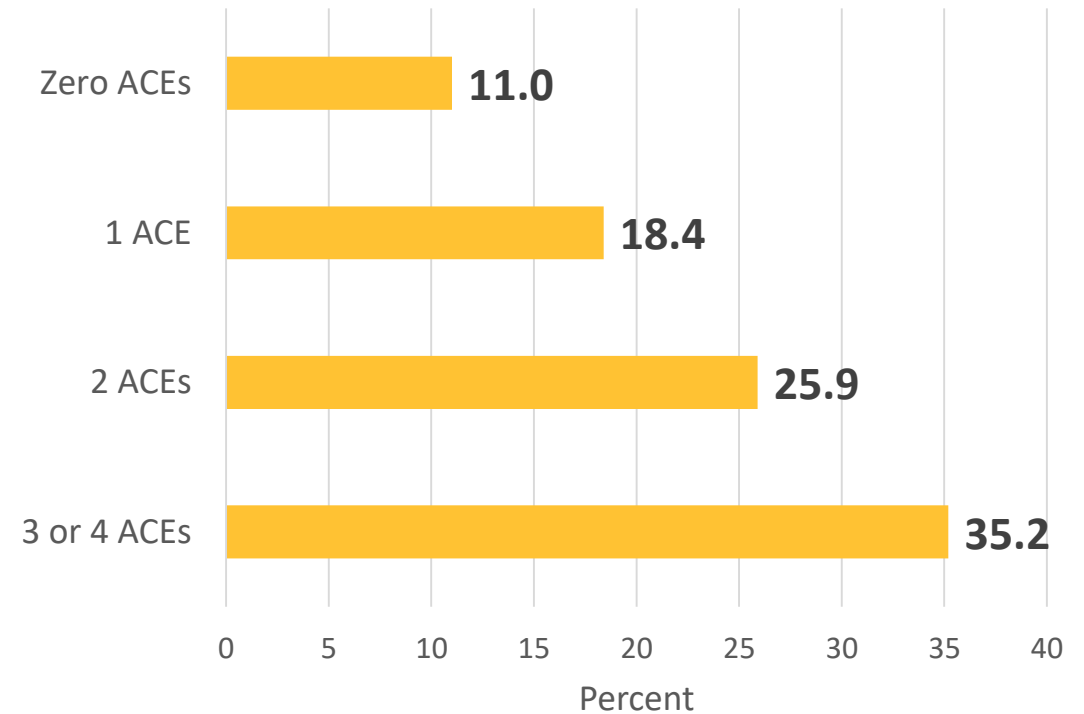
Odds of Current Marijuana Use By ACE Score

ACE Number	Odds Ratio (ORa)
Zero ACEs	1.0
1 ACE	1.9*
2 ACEs	3.0*
3 or 4 ACEs	5.0*

Adjusted OR: race, age, and sex

*Significant difference from reference group (zero ACEs)

Current Marijuana Use



Protective Factors in the Maryland YRBS/YTS

- *The data show there are three protective factors for ACEs measured in the Maryland YRBS/YTS*

Support

- Besides your parents, how many adults would you feel comfortable seeking help from if you had an important question affecting your life?

Food Security

- During the past 12 months, how often was your family worried that your food would run out before you got money to buy more?
- During the past 12 months, how often did the food your family bought not last and they did not have money to get more?

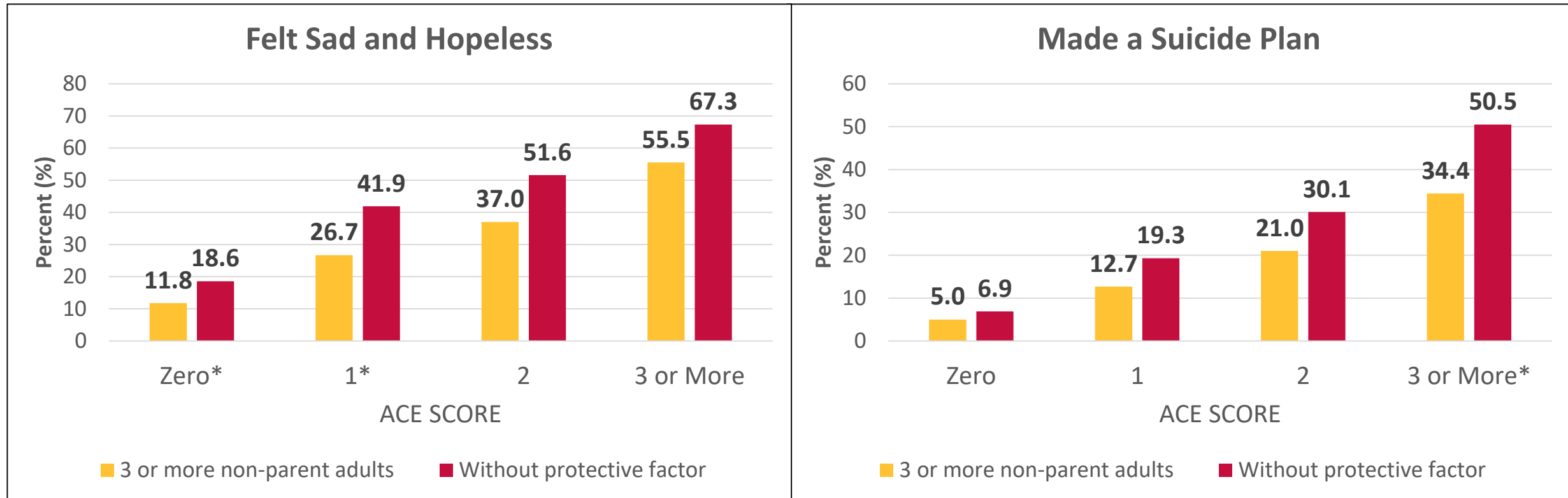
*Food Security not a protective factor in Baltimore City

Safe Environment

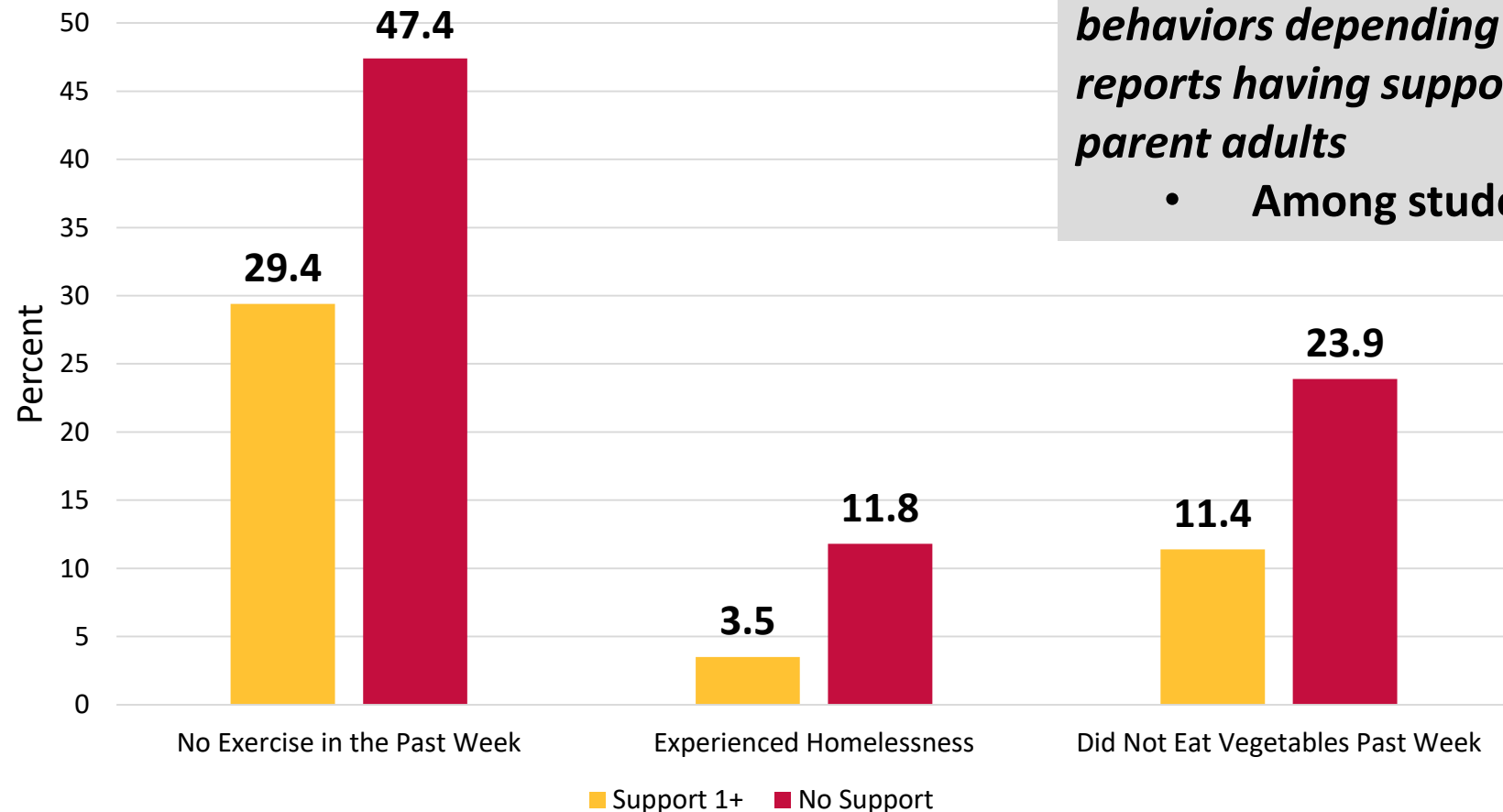
- During the past 30 days, on how many days did you **not** go to school because you felt you would be unsafe at school or on your way to or from school?

Protective Factors (Frederick County): Support From 3 or More Non-Parent Adults

- Protective factors lower the risk of risky behaviors among youth who have experienced ACEs



Protective Factor (Baltimore City): Support From 1 or more Non-Parent Adults



Significant difference in engagement of risk behaviors depending on whether a student reports having support from 1 or more non-parent adults

- Among students with 1 or more ACEs

Protective Factors (Frederick County): Food Security

- Protective factors lower the risk of risky behaviors among youth who have experienced multiple ACEs
- **1 or More ACEs & Food Insecure**
 - 53.5% Past 30 Days Tobacco Use
 - 55.7% Feeling Sad or Hopeless
 - 24.7% Misused Prescription Drugs
 - 16.3% Physical Fight on School Property
- **1 or More ACEs & Food Secure**
 - 39.5% Past 30 Days Tobacco Use
 - 42.3% Feeling Sad or Hopeless
 - 15.7% Misused Prescription Drugs
 - 7.6% Physical Fight on School Property

Protective Factors (Frederick County): Safe Environment

REPORTED FEELING UNSAFE AT SCHOOL OR GOING TO AND FROM SCHOOL

Less than 2 ACEs:

- 44.5% Tobacco Use
- 19.0% Fought on School Property
- 42.9% Felt Sad or Hopeless

2 or More ACEs:

- 67.3% Tobacco Use
- 25.9% Fought on School Property
- 67.2% Felt Sad or Hopeless

DID NOT REPORT FEELING UNSAFE AT SCHOOL OR GOING TO AND FROM SCHOOL

Less than 2 ACEs:

- 24.6% Tobacco Use
- 5.1% Fought on School Property
- 21.2% Felt Sad or Hopeless

2 or More ACEs:

- 49.2% Tobacco Use
- 11.9% Fought on School Property
- 53.1% Felt Sad or Hopeless

Protective Factors (Baltimore City): Safe Environment

REPORTED FEELING UNSAFE AT SCHOOL OR GOING TO AND FROM SCHOOL

1 or More ACEs:

- 43.5% Tobacco Use
- 42.1% Fought on School Property
- 55.1% Felt Sad or Hopeless
- 46.7% Made a Suicide Plan
- 44.7% Current Alcohol Use

DID NOT REPORT FEELING UNSAFE AT SCHOOL OR GOING TO AND FROM SCHOOL

1 or More ACEs:

- 18.8% Tobacco Use
- 20.0% Fought on School Property
- 35.6% Felt Sad or Hopeless
- 21.5% Made a Suicide Plan
- 20.4% Current Alcohol Use

Summary

In Summary

- The Maryland YRBS/YTS is the first survey that has measured ACEs among youth in Maryland
- Maryland youth exposures to ACEs are highly associated with increased risk behaviors that affect the health and safety of students
- There is a dose-response relationship between ACEs and potential risk behaviors
- The next YRBS/YTS survey is scheduled for Fall 2021 due to COVID-19
 - The survey questionnaire includes six ACE questions this year (witnessing intimate partner violence was added)
- Protective factors lower the effects of ACEs on our students
- **How can counties use this data to address ACEs at a local level?**

Resources

Questionnaire:

[https://phpa.health.maryland.gov/ohpetup/Documents/2018%20Maryland%20High%20School%20\(Grades%209%20-12\)%20Questionnaire%20-%20FINAL.pdf](https://phpa.health.maryland.gov/ohpetup/Documents/2018%20Maryland%20High%20School%20(Grades%209%20-12)%20Questionnaire%20-%20FINAL.pdf)

Data Tables:

<https://phpa.health.maryland.gov/ccdpc/Reports/Pages/YRBS2018.aspx>

IBIS:

<https://ibis.health.maryland.gov/query/selection/yrbs/YRBSSelection.html>

Thank You!

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