

# The Epidemiology of Comorbid Depressive and Conduct Disorders in Early Adolescence

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MCH Research Festival

June 8, 2011



UNIVERSITY  
OF WASHINGTON

Developmental  
Pathways Project



# Introduction

- Mental illness is a leading cause of disability, morbidity and functional impairment among youth
- Rates rise over adolescence
  - Median age of onset:
    - 11 years for behavior disorders
    - 13 years for mood disorders
- Adolescent psychopathology predicts psychiatric disorder in adulthood

# Background:

## Heterotypic Comorbidity

### Depressive Disorders (*Internalizing*)

Sad/Empty/Irritable Mood

Low Interest/Pleasure

Worthlessness/Guilt

Fatigue, Sleep Disturbance

Weight/Appetite Change

Poor concentration

Suicidality

### Conduct Disorders (*Externalizing*)

Defiance/Rule-breaking

Anger/Antagonism

Hostility/Vindictiveness

Aggression (People/Animals)

Property Destruction

Deceitfulness/Theft

Repeat Runaway/Truancy

# Knowledge Gaps

## Study Questions

How prevalent are comorbid and non-comorbid forms of depressive and conduct disorders during middle school?

- Overall; By Gender

In what ways are middle schoolers afflicted with both disorders different from those with depression only or conduct disorder only?

- Youth and Family Sociodemographics, Negative Life Events

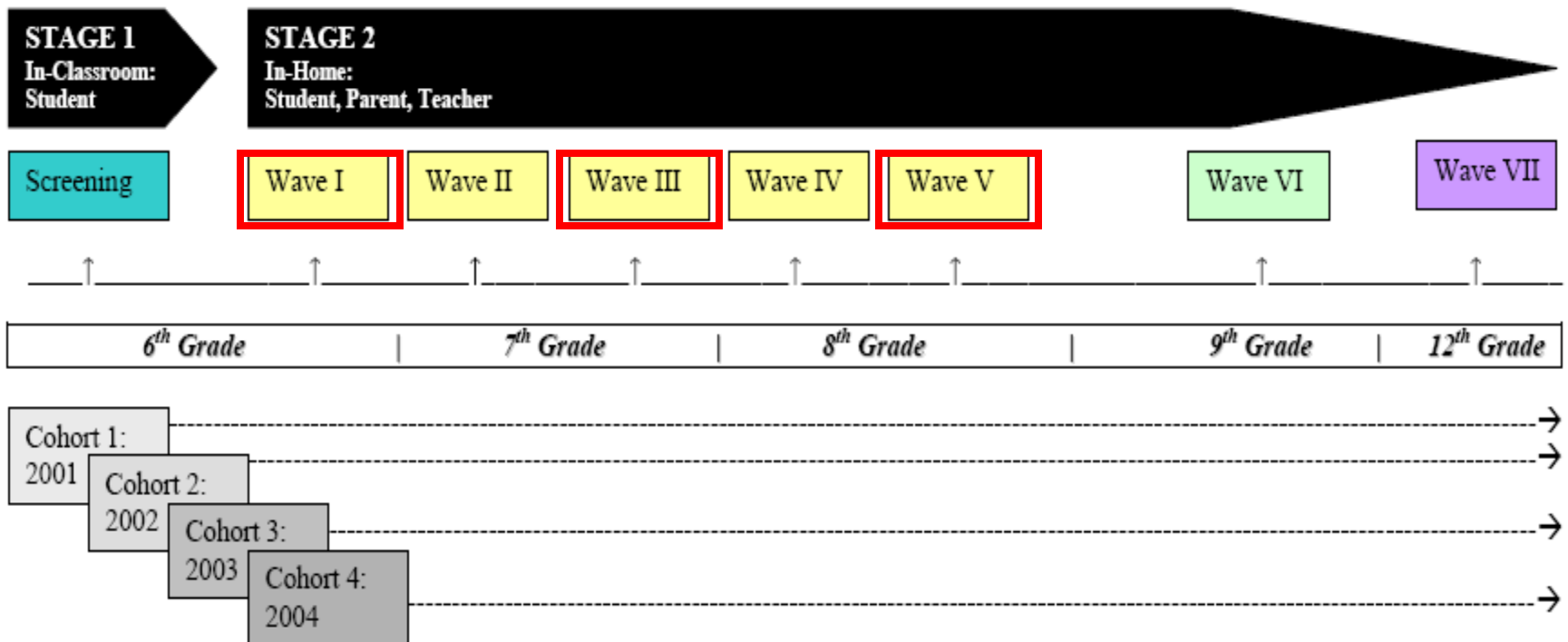
# Methods

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# Study Design and Setting



## Study Design Timeline



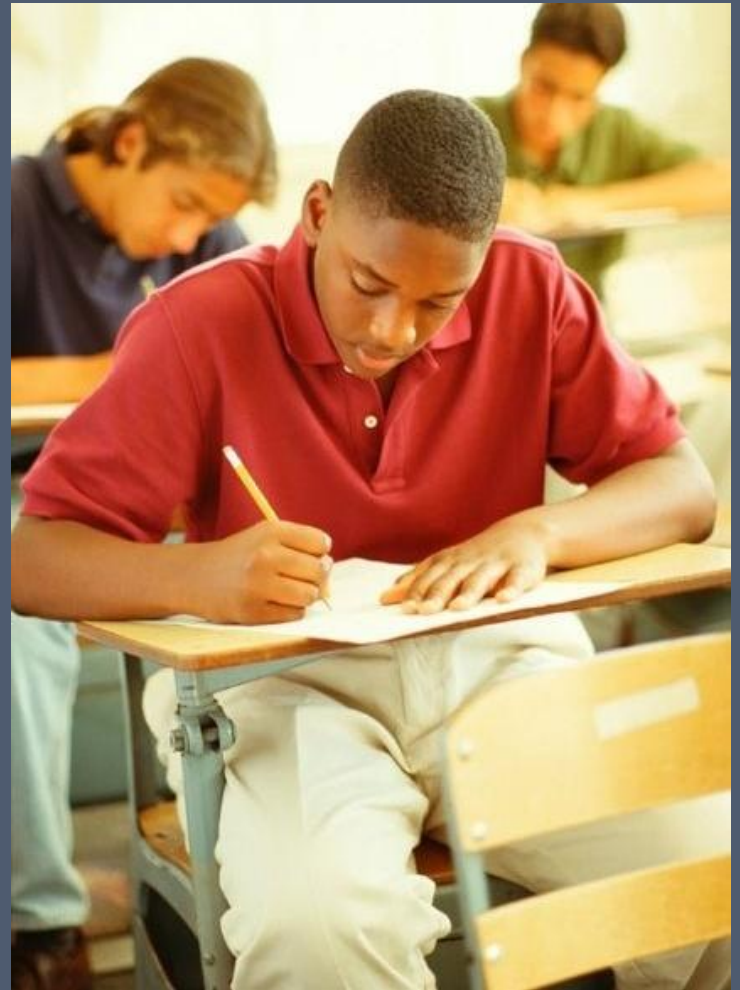
# Participant Selection

- 4 Seattle Public Middle Schools: ~3000 6<sup>th</sup> graders

- ~2200 completed depression/conduct problem screeners

- 521 enrolled in follow-up study




- 428 in current analyses



# Measures: Outcome

## Depressive and/or Conduct Disorder Diagnosis

- C-DISC: computer-assisted diagnostic interview
- Combined youth/parent criteria (past year)
- DD: Major Depression, Minor Depression, Dysthymia
- CD: Oppositional Defiant Disorder, Conduct Disorder



COMORBID	Visit 1 (6 <sup>th</sup> gr.)	Visit 3 (7 <sup>th</sup> gr.)	Visit 5 (8 <sup>th</sup> gr.)
Depressive Disorder	No	No	
Conduct Disorder	No		



# Measures: Outcome

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COMORBID	Visit 1 (6 <sup>th</sup> gr.)	Visit 3 (7 <sup>th</sup> gr.)	Visit 5 (8 <sup>th</sup> gr.)
Depressive Disorder		No	Missing
Conduct Disorder	No		Missing

# Measures: Outcome

## Depressive and/or Conduct Disorder Diagnosis


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DD ONLY	Visit 1 (6 <sup>th</sup> gr.)	Visit 3 (7 <sup>th</sup> gr.)	Visit 5 (8 <sup>th</sup> gr.)
Depressive Disorder	No	No	
Conduct Disorder	No	No	No

# Measures: Outcome

## Depressive and/or Conduct Disorder Diagnosis

- C-DISC: computer-assisted diagnostic interview
- Combined youth/parent criteria (past year)
- DD: Major Depression, Minor Depression, Dysthymia
- CD: Oppositional Defiant Disorder, Conduct Disorder

CD ONLY	Visit 1 (6 <sup>th</sup> gr.)	Visit 3 (7 <sup>th</sup> gr.)	Visit 5 (8 <sup>th</sup> gr.)
Depressive Disorder	No	No	No
Conduct Disorder		No	No

# Measures: Outcome

## Depressive and/or Conduct Disorder Diagnosis

- C-DISC: computer-assisted diagnostic interview
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- DD: Major Depression, Minor Depression, Dysthymia
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<b>NEITHER</b>	<b>Visit 1 (6<sup>th</sup> gr.)</b>	<b>Visit 3 (7<sup>th</sup> gr.)</b>	<b>Visit 5 (8<sup>th</sup> gr.)</b>
Depressive Disorder	No	No	No
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- C-DISC: computer-assisted diagnostic interview
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<b>INDETERMINATE</b>	<b>Visit 1 (6<sup>th</sup> gr.)</b>	<b>Visit 3 (7<sup>th</sup> gr.)</b>	<b>Visit 5 (8<sup>th</sup> gr.)</b>
Depressive Disorder	No	No	Missing
Conduct Disorder	No	No	Missing

# Measures: Outcome

## Depressive and/or Conduct Disorder Diagnosis

- C-DISC: computer-assisted diagnostic interview
- Combined youth/parent criteria (past year)
- DD: Major Depression, Minor Depression, Dysthymia
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INDETERMINATE	Visit 1 (6 <sup>th</sup> gr.)	Visit 3 (7 <sup>th</sup> gr.)	Visit 5 (8 <sup>th</sup> gr.)
Depressive Disorder	No		Missing
Conduct Disorder	No	No	Missing

# Measures: Predictors

## Youth Characteristics

Gender

Race

Ethnicity

## Family Characteristics

Foreign-born parent

Income

# Adults

Caregiver education

## Life Events Checklist

### Family

- Parents divorced
- New baby

### Peers

- Best friend moved away
- Friend got injured/ill

### School

- Changed school 2+ times/year
- Suspended

# Analyses

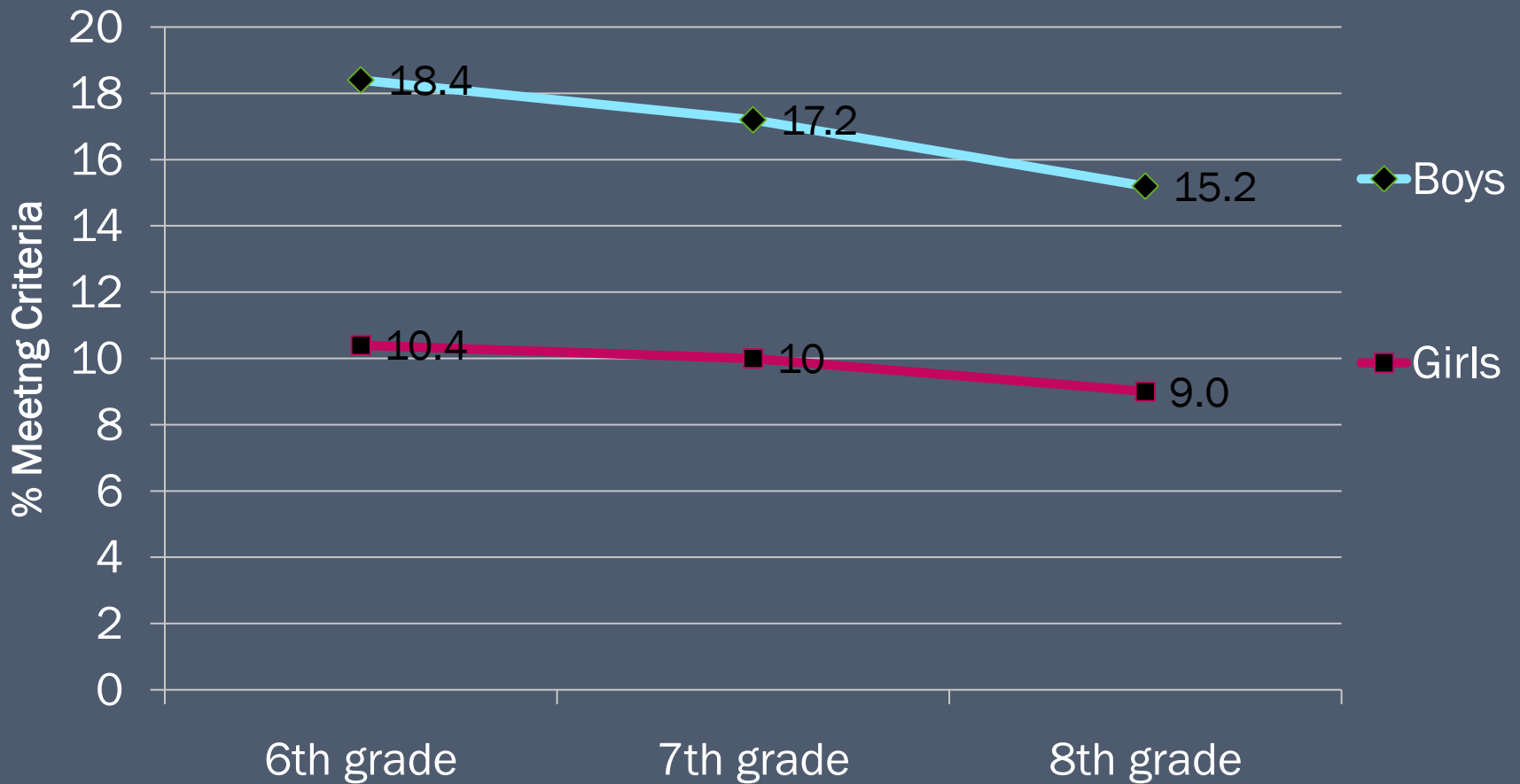
- AIM 1: Estimate the overall and gender-specific period prevalence of comorbid and non-comorbid depressive and conduct disorders across middle school
  - Apply sampling weights so results reflect SPS District
- AIM 2: Evaluate association between outcome group and both sociodemographics and history of negative life events
  - Chi-square tests to determine sociodemographic factors associated with comorbidity
  - Multinomial logistic regression to determine whether comorbidity associated with high burden of negative events



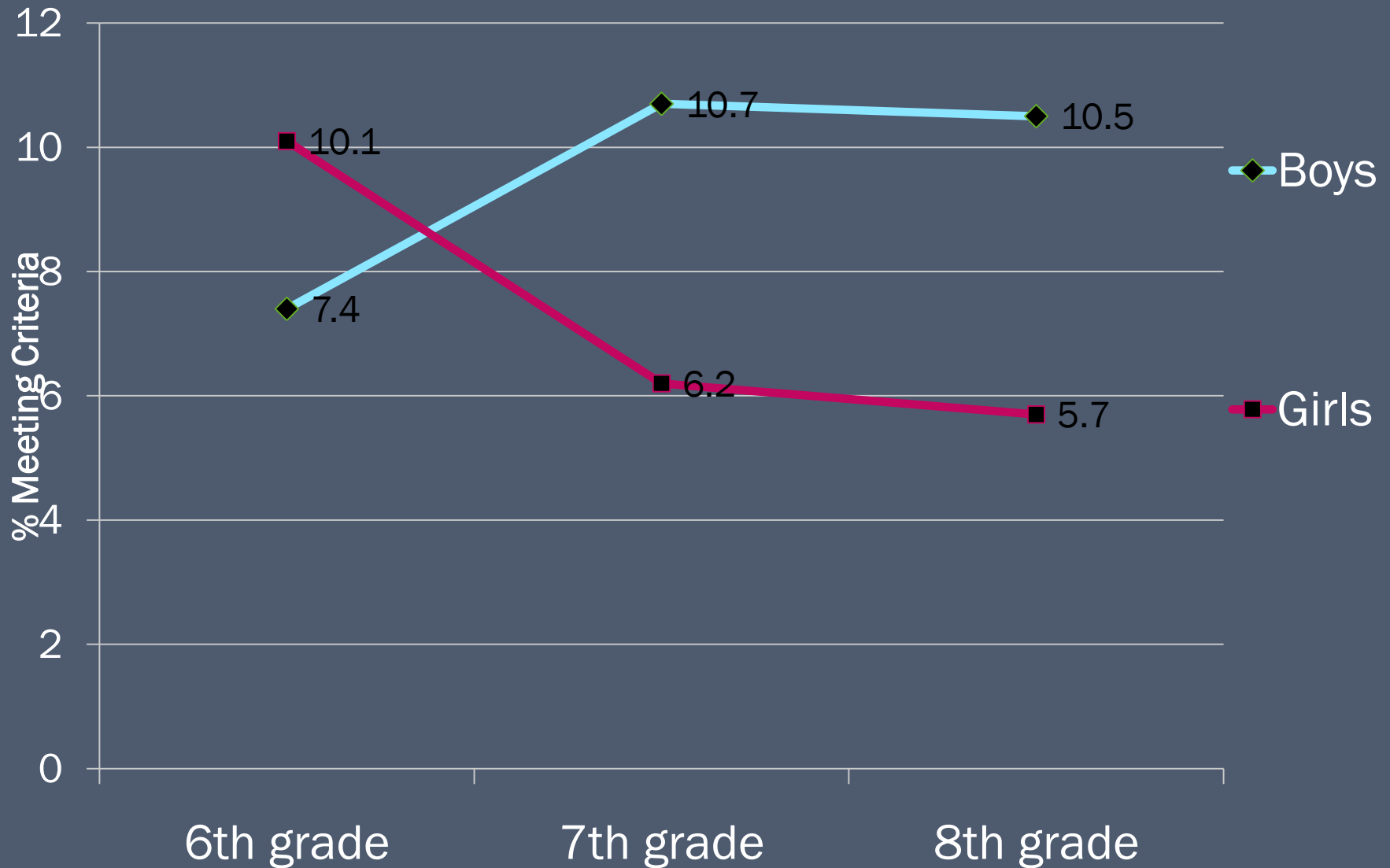
# Results

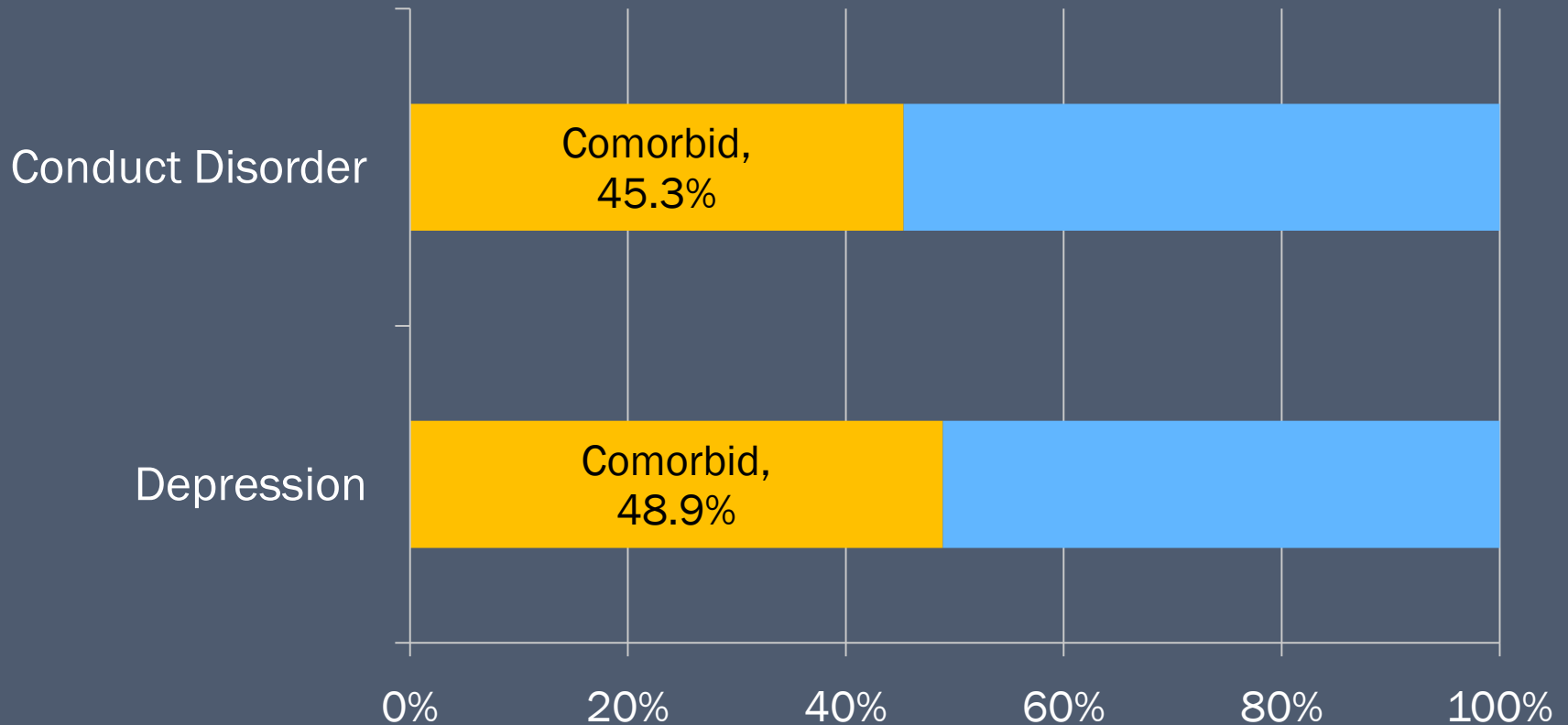
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Past-year prevalence of **conduct disorder** at each assessment underestimates cumulative burden across middle school by up to a half (31% boys, 21% girls).

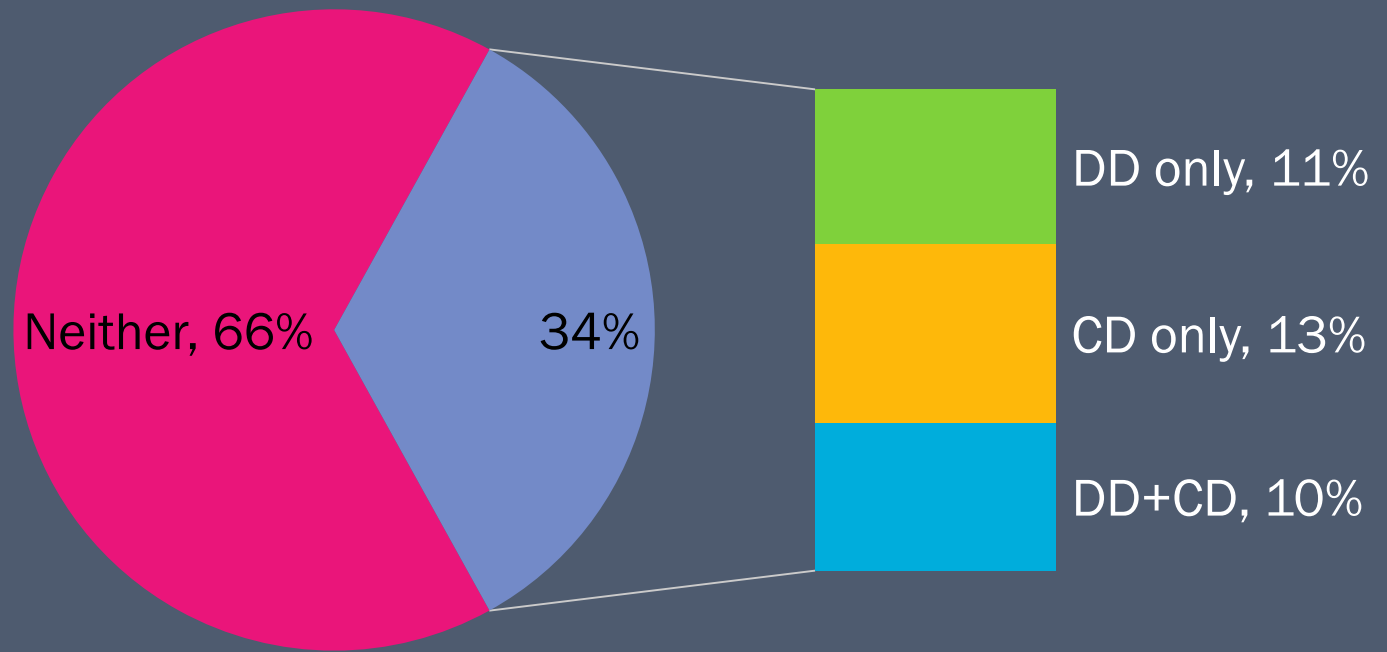


Past-year prevalence of **depression** at each assessment underestimates cumulative burden across middle school by up to two-thirds (26% boys, 19% girls).



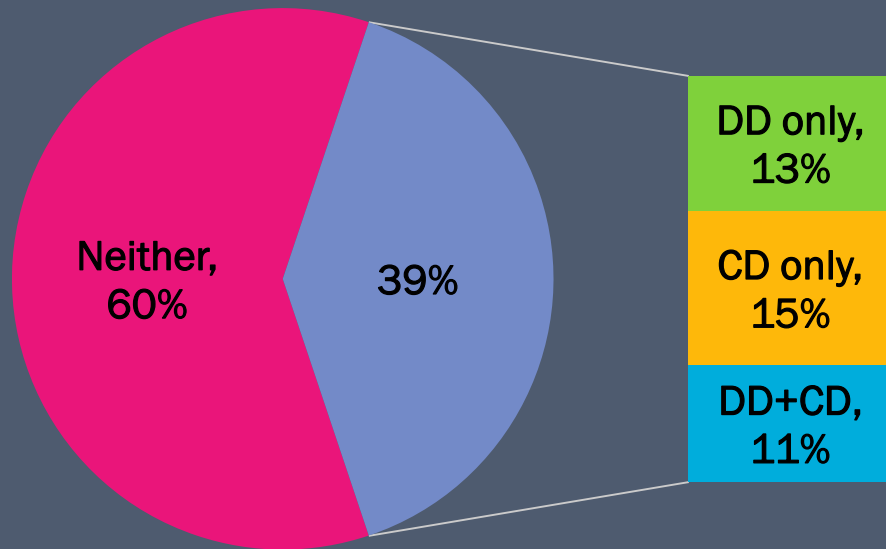


- Comorbidity with depression occurs in 45% of young adolescents with a conduct disorder.
- Almost half of youth meeting criteria for depression during middle school have comorbidity with a conduct disorder.

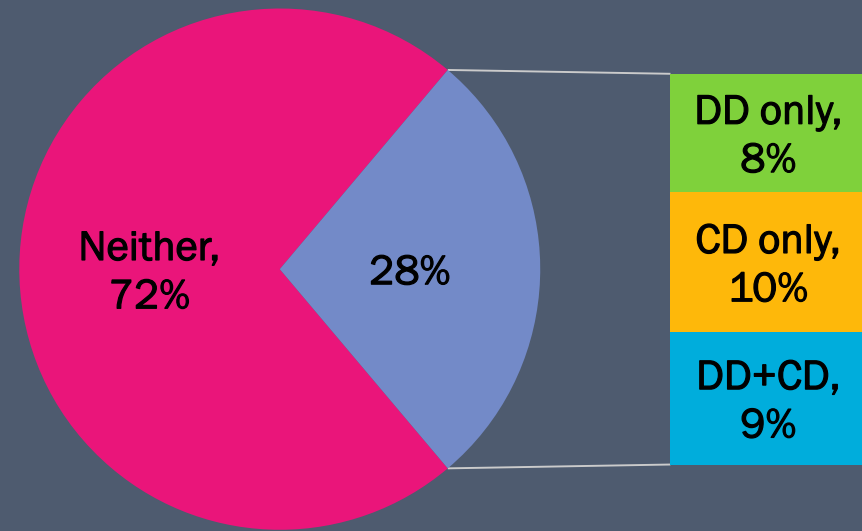


One third of students meet criteria for a depressive and/or conduct disorder at some point during middle school.

## Boys

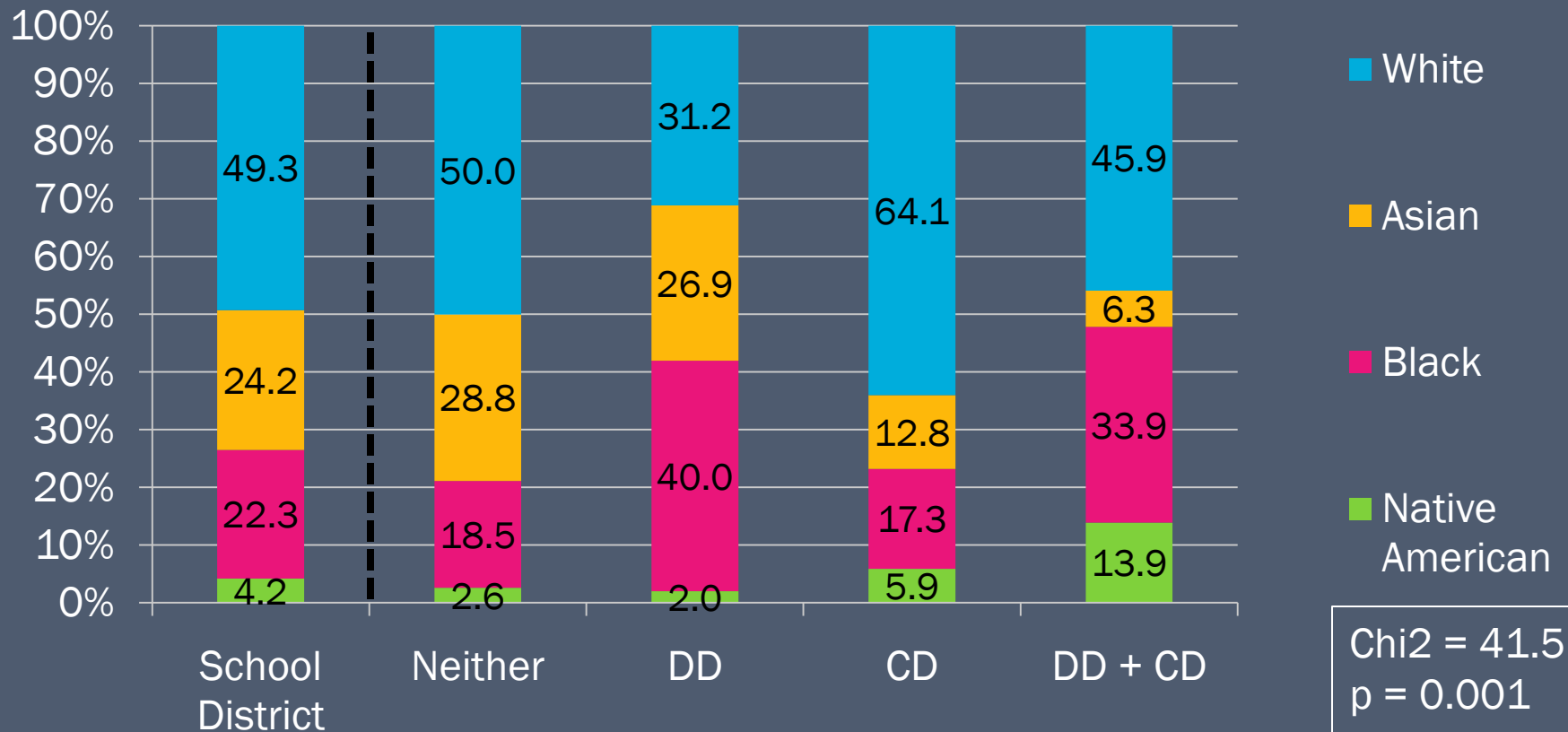


## Girls

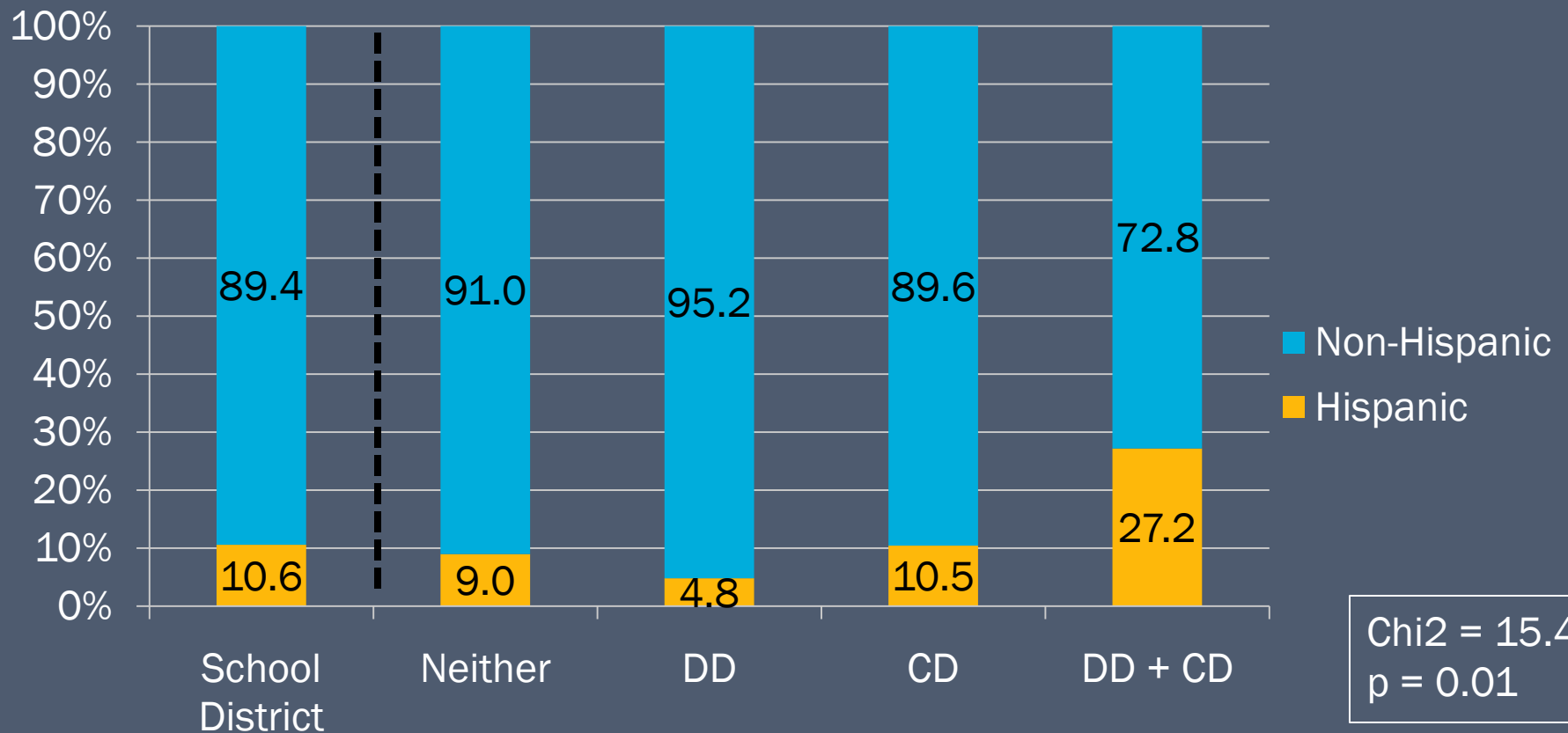


Slightly higher prevalence among boys

# Youth Race

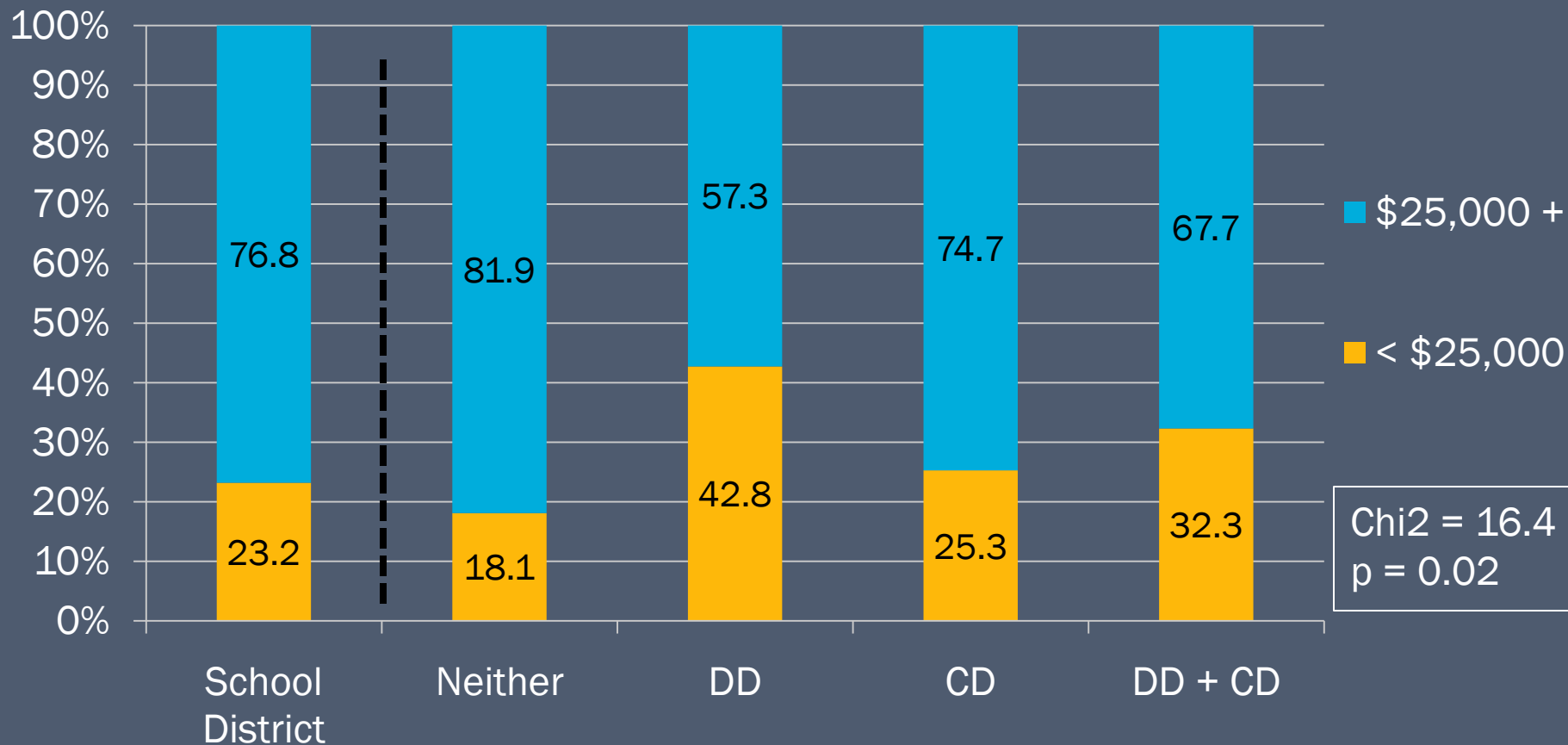


# Youth Ethnicity

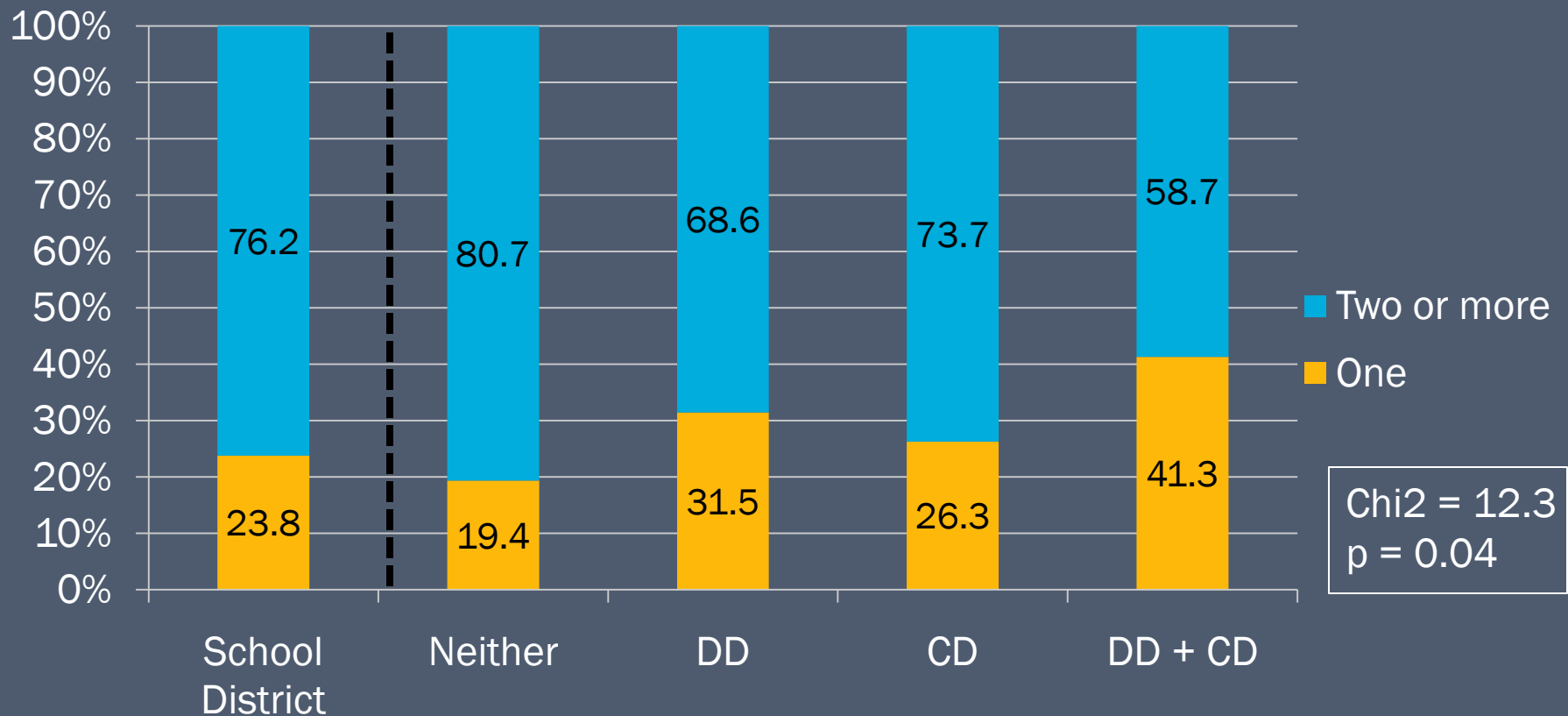




# Annual Family Income



# Number of Adults in Household



# Characteristics *not* significantly associated with psychopathology group

		Neither	DD alone	CD alone	DD + CD	
		Weighted %				p-value
Youth Gender	Female	52	37	38	43	0.16
	Male	48	63	63	57	
Immigrant parent		38	28	32	36	0.72
Education of primary caregiver	Less than HS	4	11	8	4	0.19
	HS/GED	13	22	9	25	
	Beyond HS	83	67	84	70	

# High burden of negative life events associated with comorbidity

	Comorbid	Depression only	OR (95% CI)	aOR* (95% CI)
5+ negative life events	69.4%	39.9%	3.41 (1.17, 9.98)	3.30 (0.96, 12.07)

\*Adjusted for # adults in household

	Comorbid	Conduct Disorder only	OR (95% CI)	aOR* (95% CI)
5+ negative life events	69.4%	42.6%	3.05 (1.27, 7.31)	2.77 (1.07, 7.18)

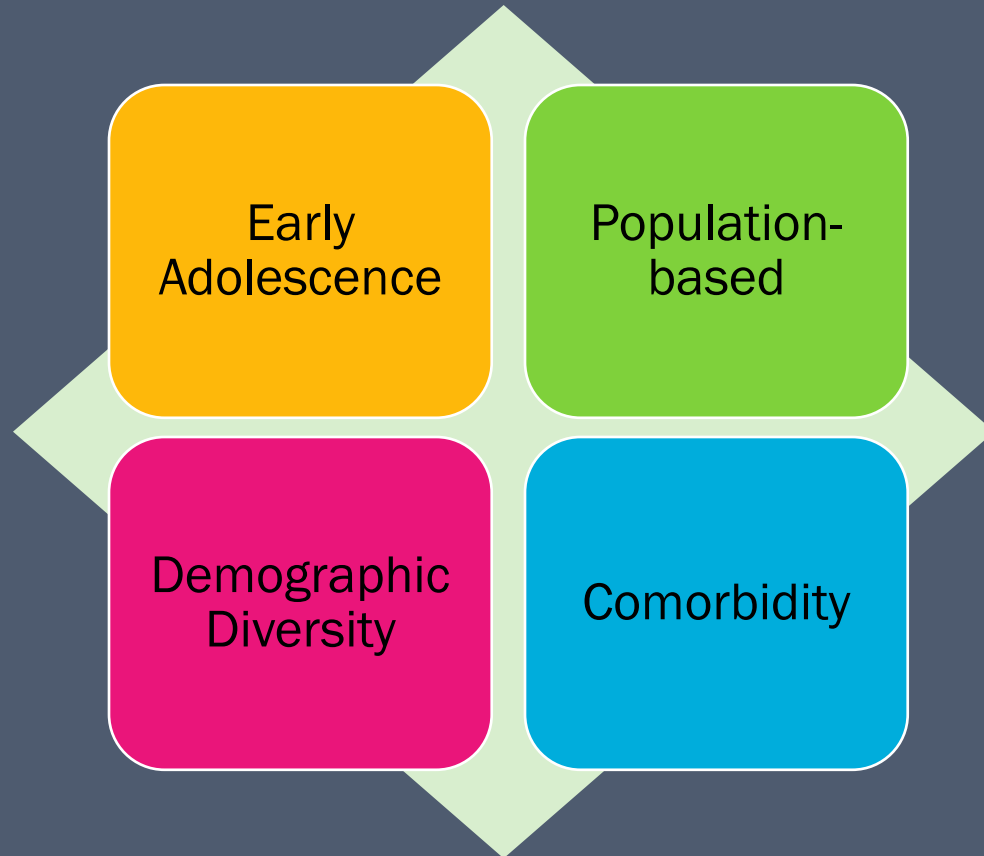
\*Adjusted for # adults in household

# Limitations

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- Potential bidirectionality of life events and psychopathology
- Heterogeneity of diagnoses within outcome groups
- Exclusion of youth with indeterminate outcome group

# What This Study Adds



# Committee



Ann Vander Stoep, PhD (Chair)

- Depts of Epidemiology, Psychiatry & Behavioral Sciences; DPP Co-PI

Melissa Schiff, MD, MPH

- Dept of Epidemiology; MCH Faculty

This work is supported in part by:

- Project #T76 MC 00011 from the Maternal and Child Health Bureau (Title V, Social Security Act), Health Resources and Services Administration, US DHHS
- Grant #R01 MH63711 from the National Institute of Mental Health and the National Institute of Drug Abuse, Ann Vander Stoep & Elizabeth McCauley, Co-PIs.

# Thank You!





# Supplemental Slides

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# Differences in youth with indeterminate outcome group

## Different

- Minority race
- Immigrant parent

## Same

- Hispanic ethnicity
- Gender
- # Adults in house
- 6<sup>th</sup> grade Dx

# Conceptual Model

