

# Adolescent Health: R U Effective?

**Robert Wm. Blum, MD, MPH, Ph.D.**

**William H. Gates Sr. Professor and Chair**

**Johns Hopkins University**

**Bloomberg School of Public Health**

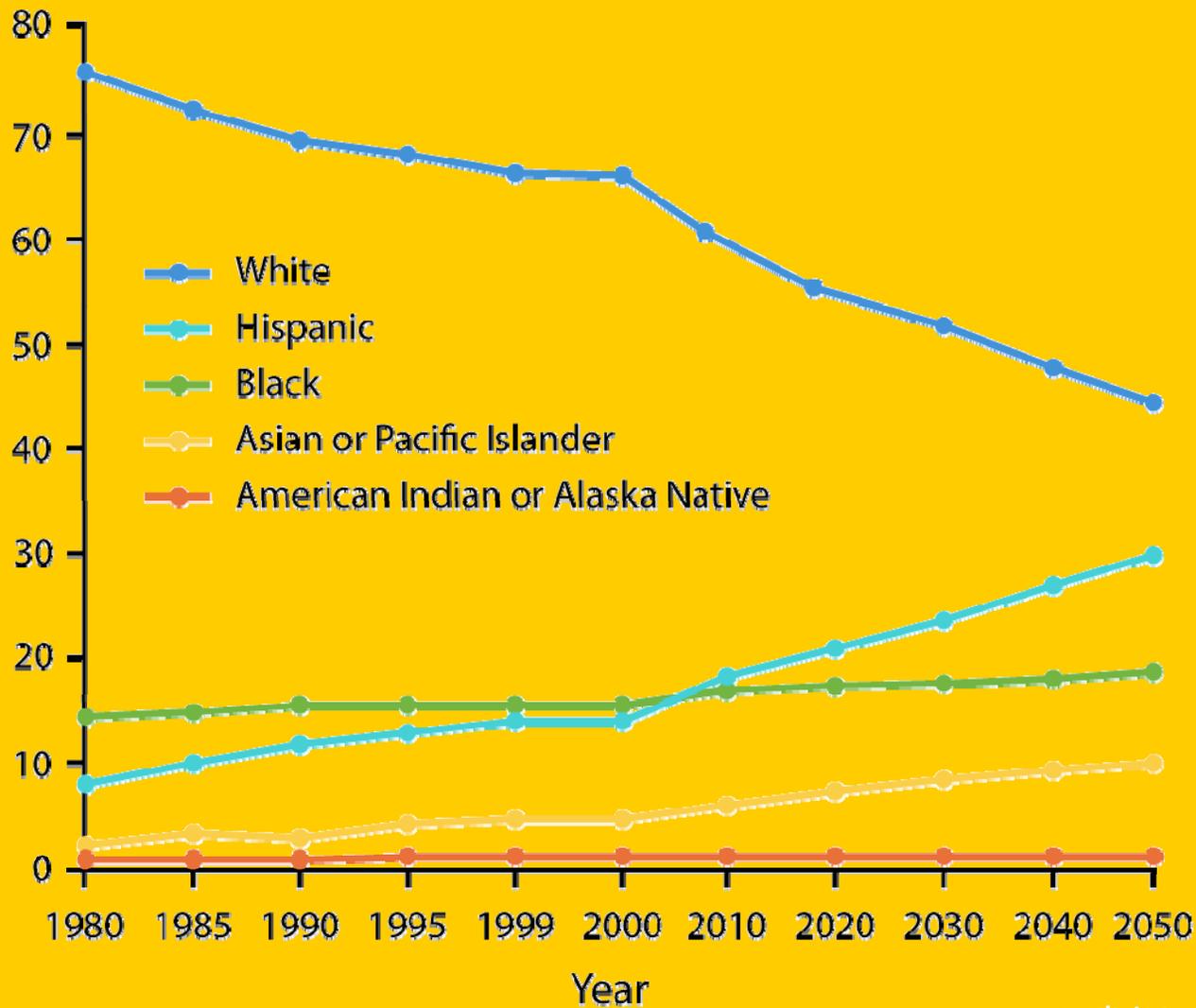
**Department of Population and Family Health Sciences**

# Youth in the United States

- There are 63 million young people 10-24 years of age in the United States representing 21% of the population.
- In the United States, youth 15–24 years of age represent 13.9% of the population.

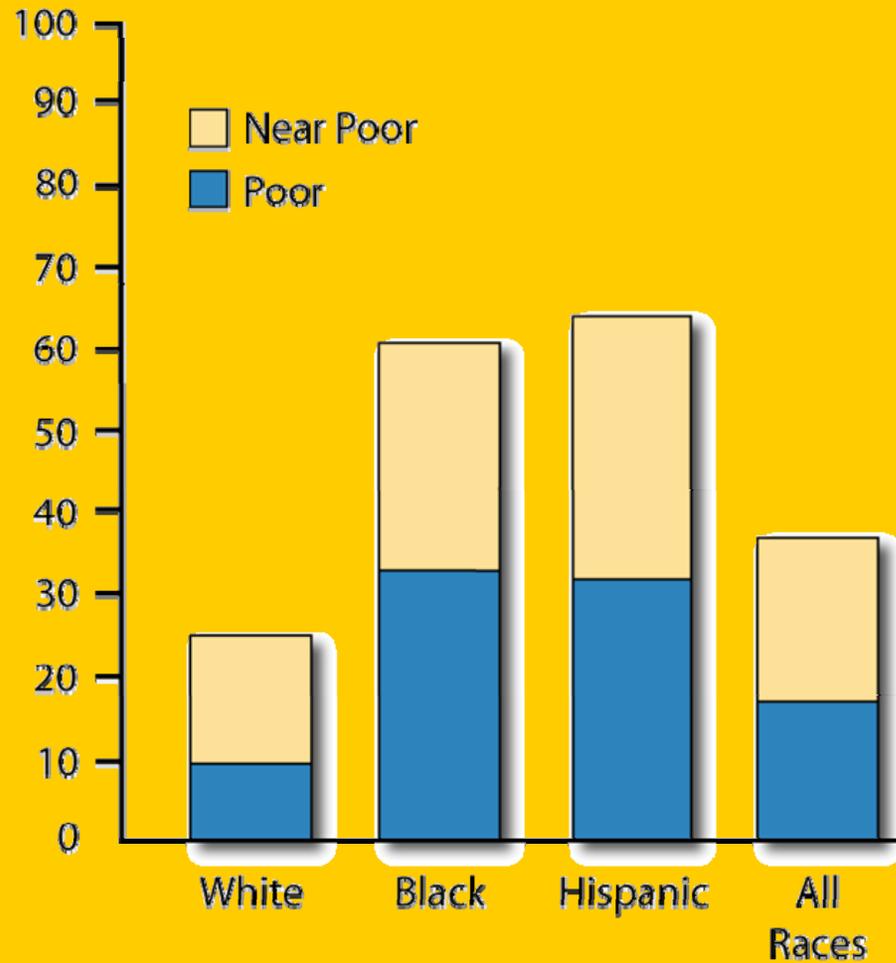
# Changes in Ethnicity over Time

Ethnicity of United States Adolescents  
(1980 – 2050)



# Poverty

Poverty by Race/Ethnicity Among Adolescents 10–17 Years of Age  
(United States, 2003)

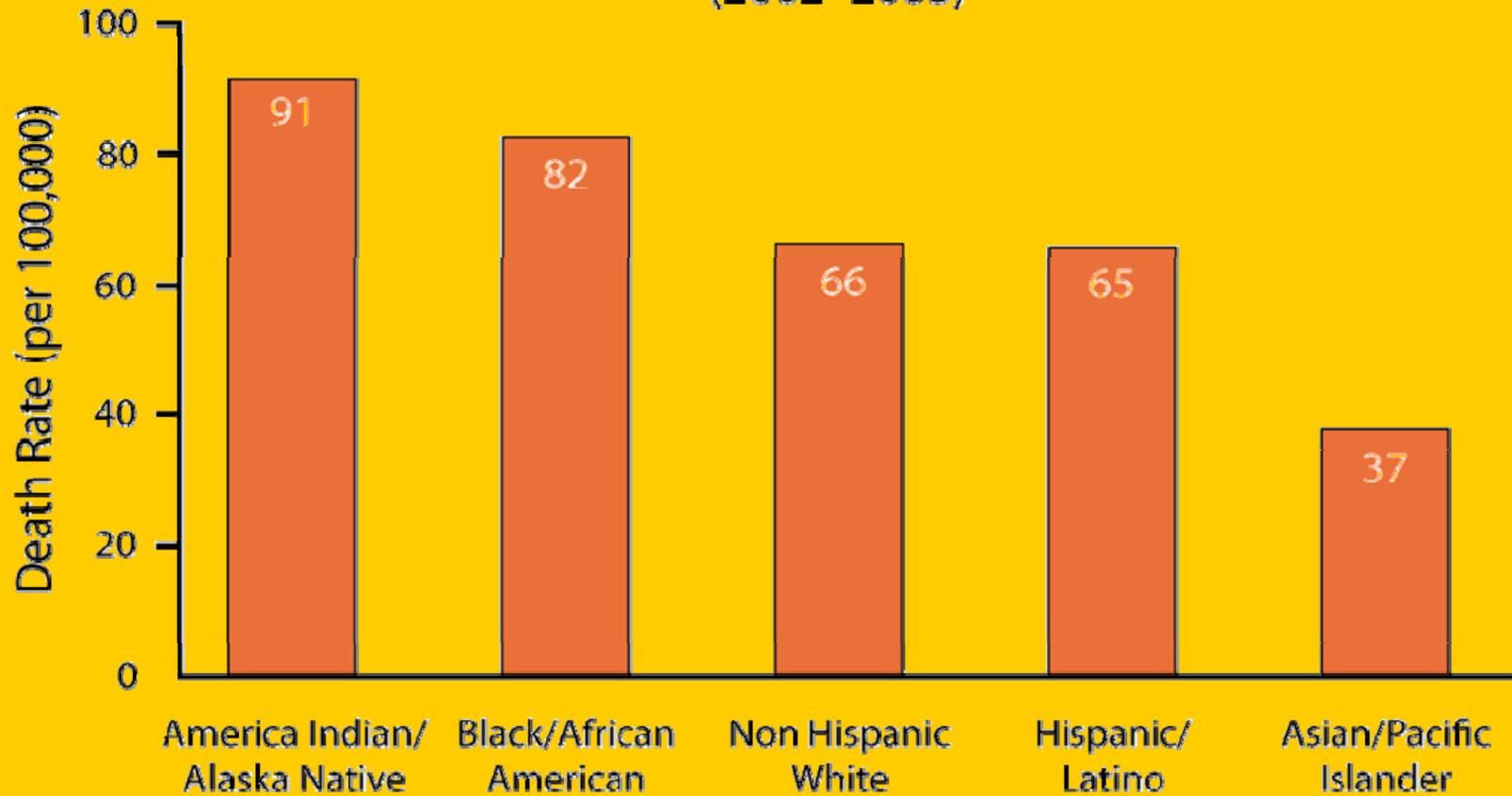


# Immigrant Status

- In 1990 19% of adolescents less than 20 years old lived in immigrant families.
- By 2008 it has risen to 23.7%.

# Death Rates

Teen Death Rates, Ages 15–19  
(2002–2003)



# Injuries

- **Seventy-five percent of all deaths in the second decade are from injuries: vehicular injuries, homicide, suicide**
- **Males are 5 times more likely to be injured than females**
- **While motor vehicle deaths are the primary cause of teen deaths, mortality fell 38% between 1980–1992**

# **Structural Changes Impacted Juvenile Auto Fatality Rates**

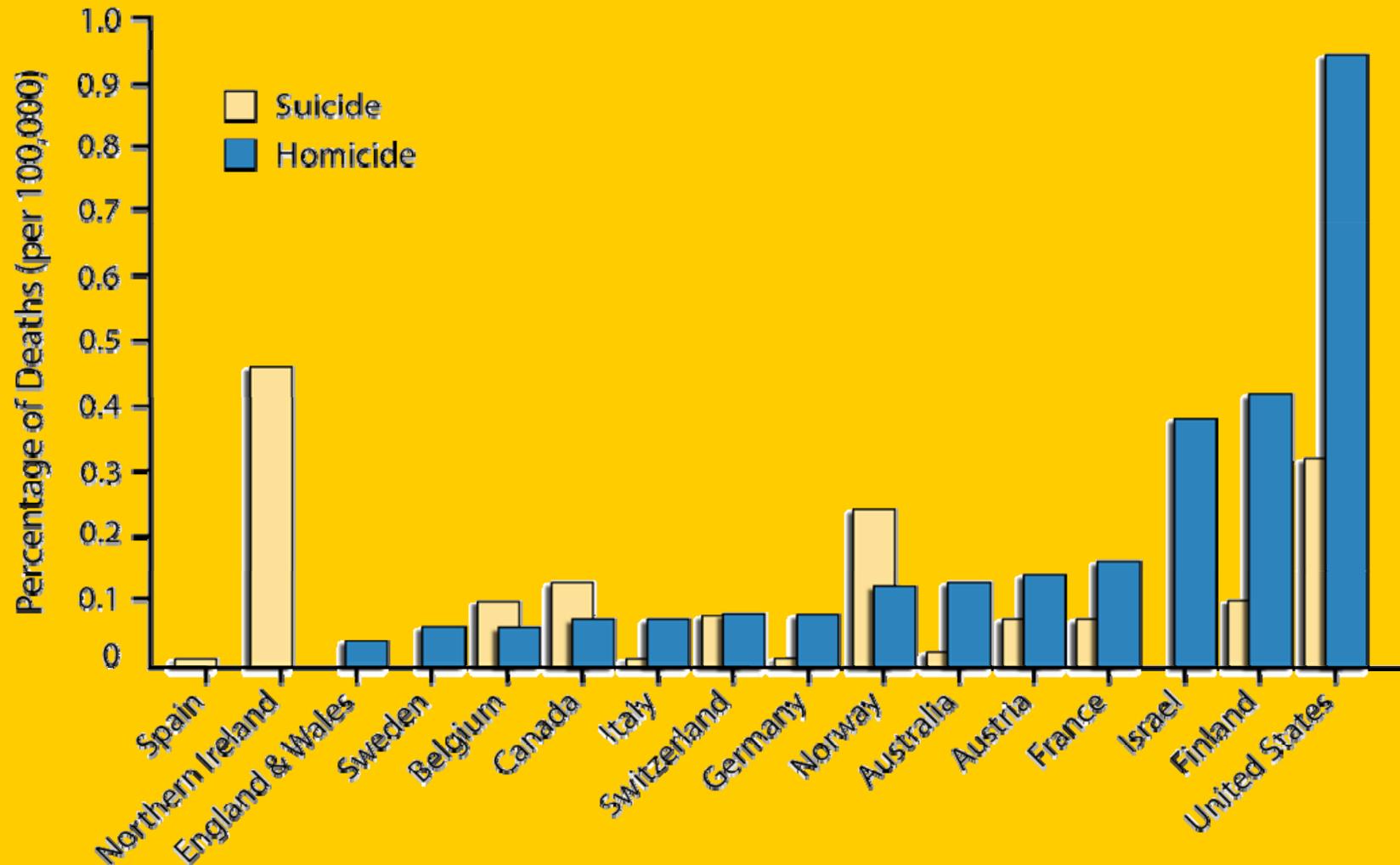
- **Mandatory seatbelt laws**
- **Graduated licenses**
- **Limitation on nighttime driving**
- **Limitation of number of passengers for new drivers**

# Behavioral changes have made a difference

- The percent of teens who report never wearing a seatbelt declined from 25.9% in 1991 to 9.7% in 2009.
- In 1991 39.9% of teens reporting haven ridden with a driver who had been drinking; in 2009 it was 28.3%.
- In 1991 16.7% of teens reported that they drove after drinking; in 2009 it was <10%.

# Weapon-Related Violence

Percentage of Firearm-Related Deaths per 100,000 Juveniles, Ages 0–14, by Country



# Youth Violence

- **The United States has a higher firearm mortality rate among children and youth than the next highest 25 industrialized nations of the world...**

**...combined.**

# Suicide

- **One-third of all firearm deaths are from suicide**
- **According to the YRBS, in 2009:**
  - ◆ **13.8% of youth contemplated suicide**
  - ◆ **10.9% said that they made a suicide plan**
  - ◆ **6.3% attempted suicide**

# Substance Use is Down among Youth in the United States

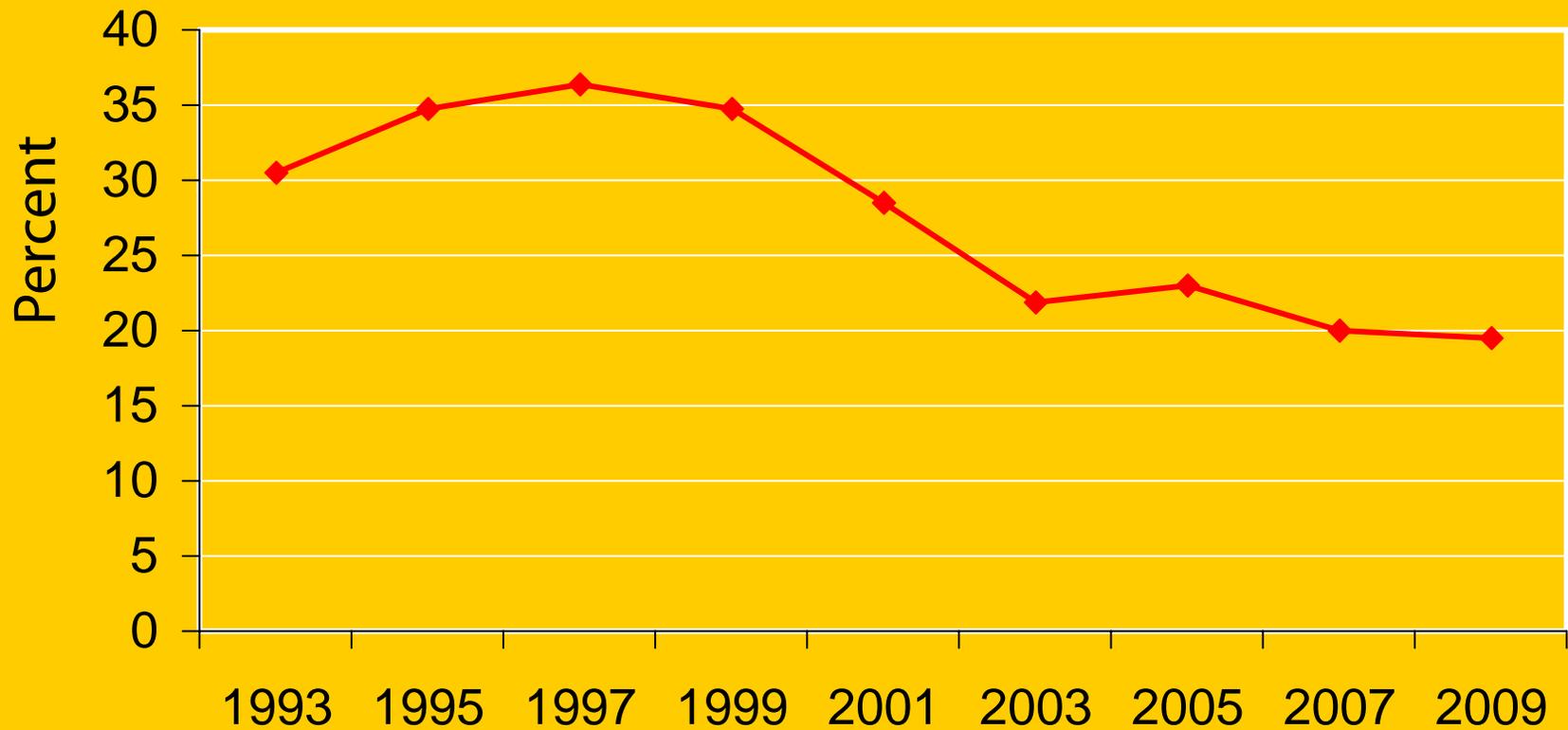
 Tobacco Use

 Alcohol Use

 Drug Use

# Smoking

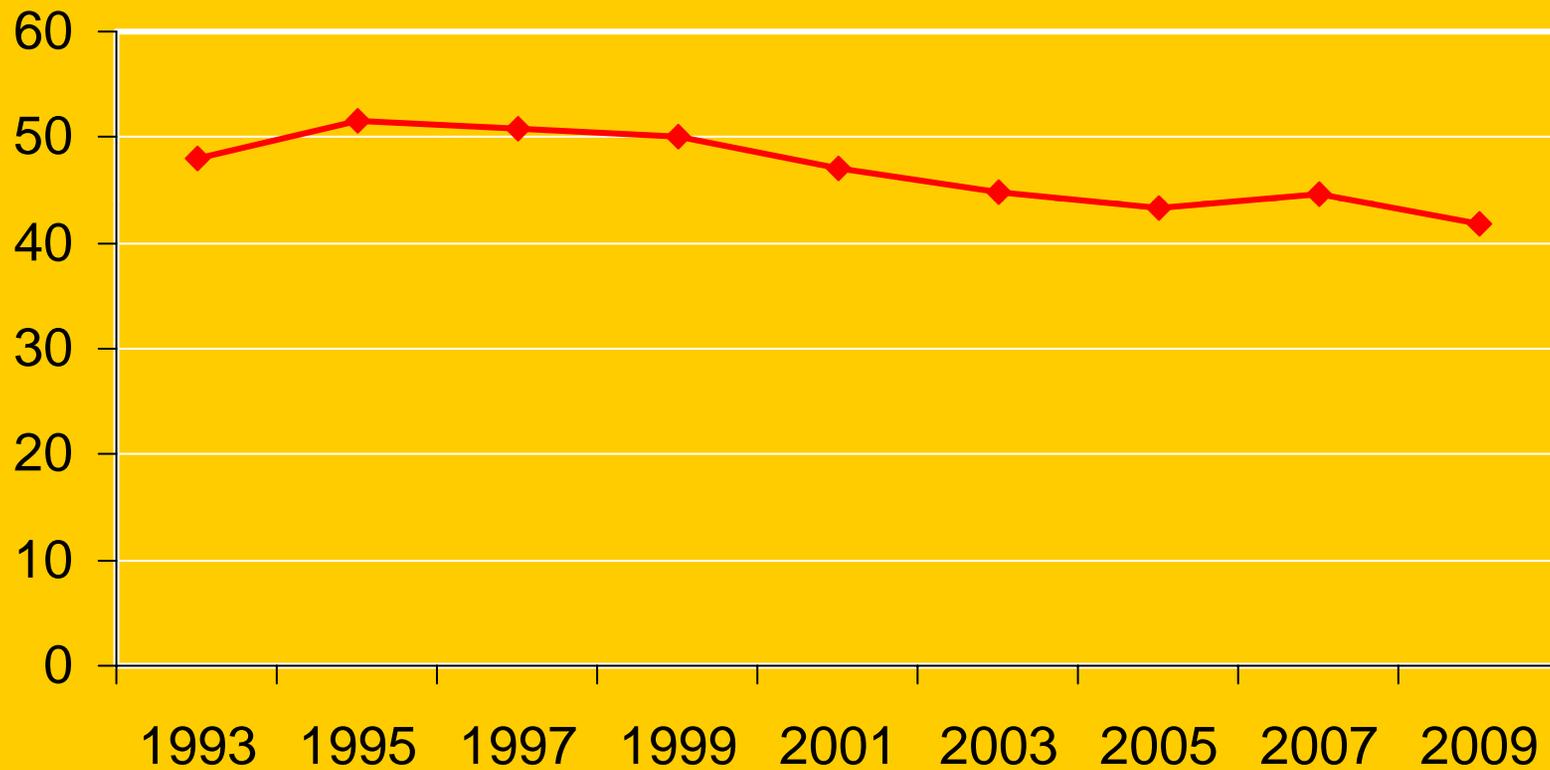
Percent of Students Who Smoked Cigarettes on One or More of the Past 30 Days



# Alcohol

Percent of Students Who Had at Least One Drink of Alcohol During the Past 30 Days

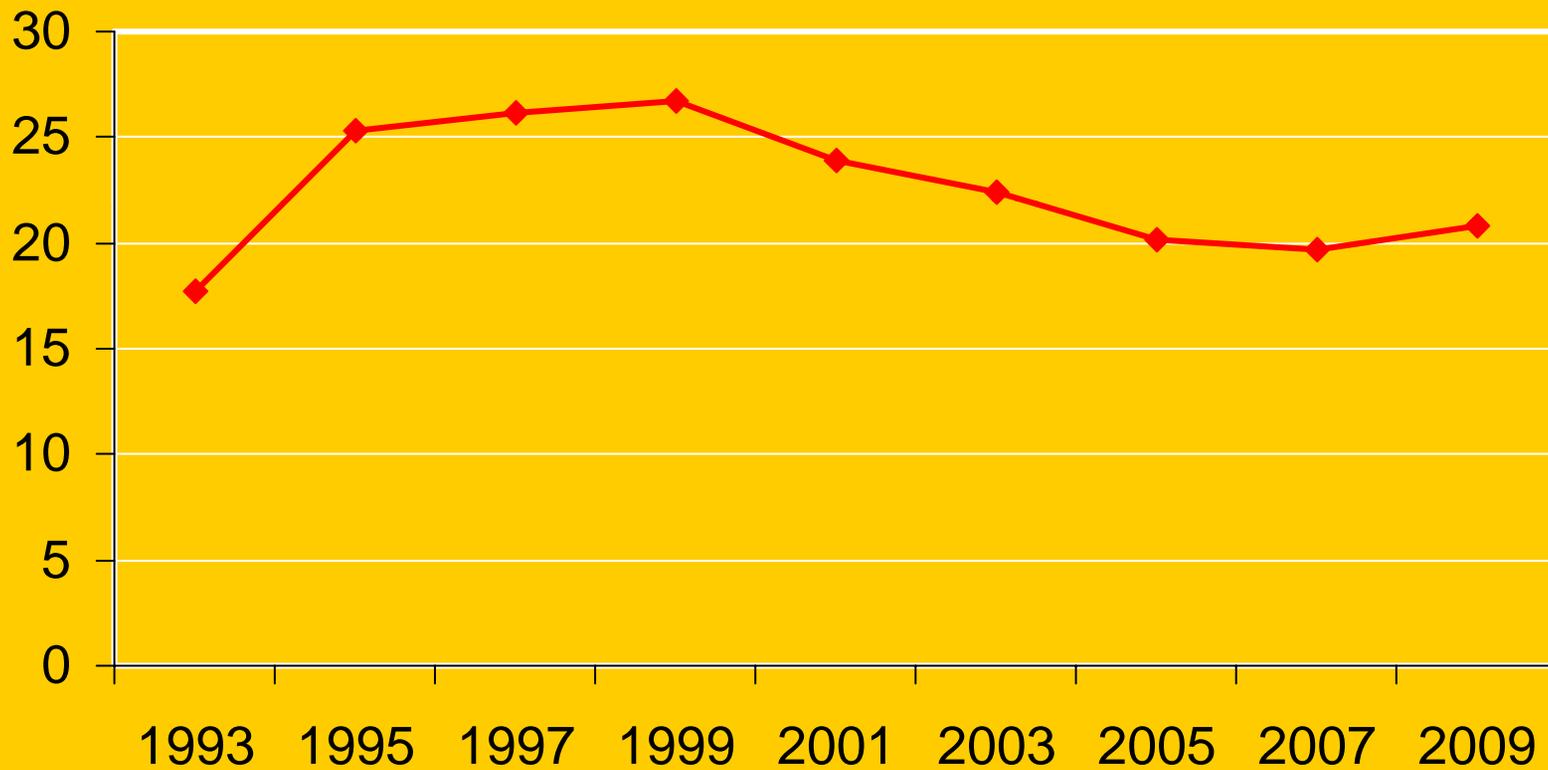
Percent



# Marijuana

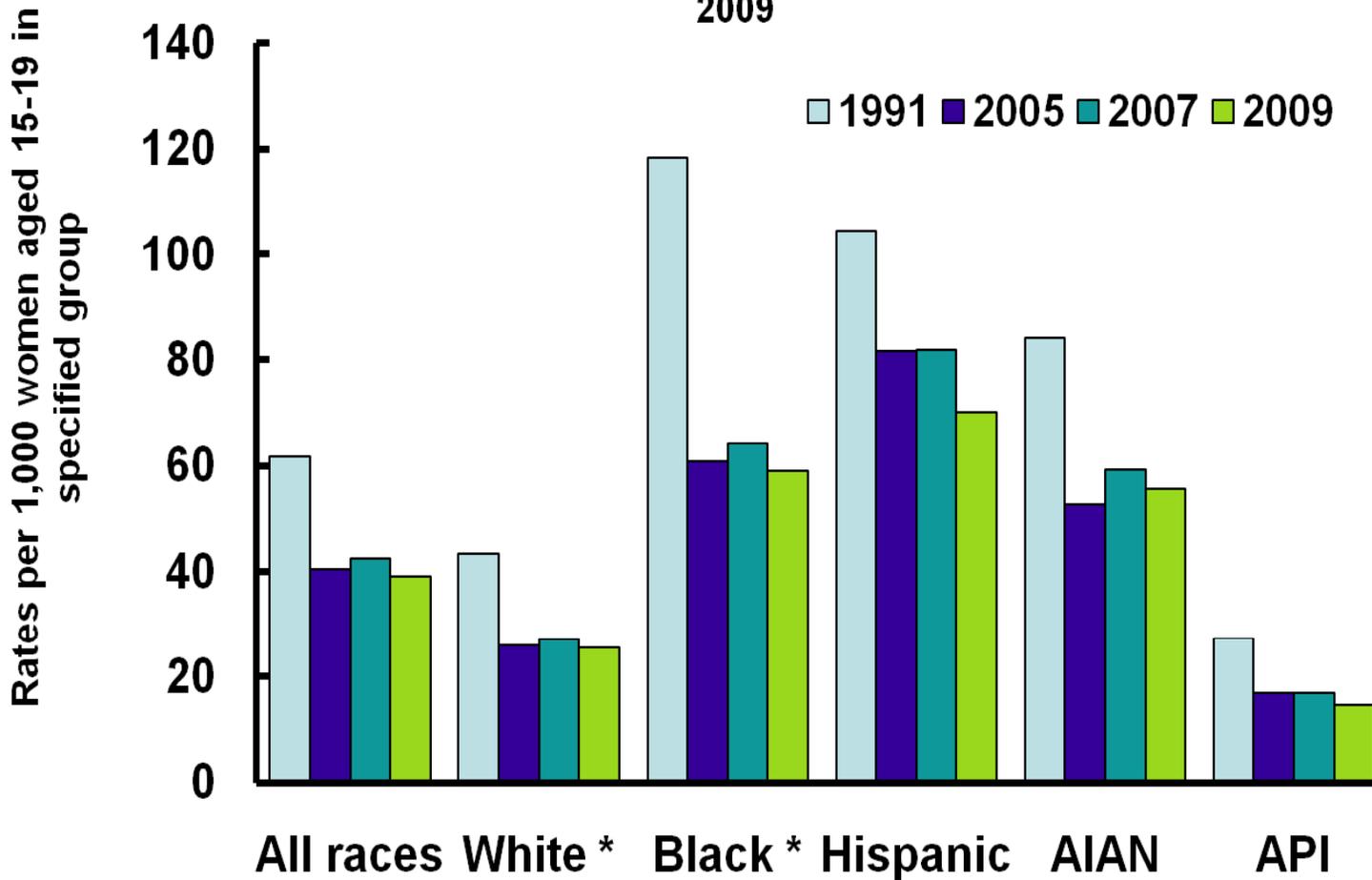
Percent of Students Who Used Marijuana  
One or More Times During the Past 30 Days

Percent



# Adolescent Birth Rate hit all time low in 2010

Figure 2. Birth rates for teenagers 15-19 years by race and Hispanic origin: United States, final 1991, 2005, and 2007, and preliminary 2009



# Trends in Adolescent Sexual Behavior

- Condom use has increased from 46.2% in 1991 to 61.1% at last intercourse in 2009
  - ◆ 50% of boys and 25% of girls say they use them all the time
- Behavior change has been greater among adolescent males than females
- In 2006 adolescent pregnancy rates were the lowest point 1969; since then they have inched up.
- Pregnancy rates among teens who are sexually active are 152 per 1000 (2008).
- In 2009, 3.1% of females and 8.4% of males reported having sexual intercourse < 13 years of age (down from 5.1% and 15.1% respectively in 1991).

## **Dramatic Increase in U.S. Obesity over the Last 20 Years**

### **■ 1985**

- ◆ **Only a few states were participating in CDC's BRFSS and providing obesity data**

### **■ 1991**

- ◆ **Four states had obesity prevalence rates of 15–19 percent**
- ◆ **No states had rates at or above 20 percent**

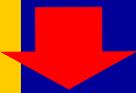
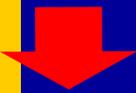
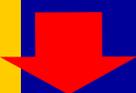
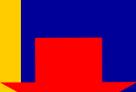
### **■ 2009**

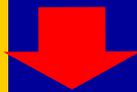
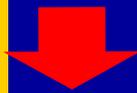
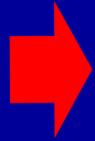
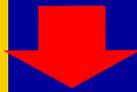
**12.0% Adolescents Obese (<95centile)**

**15.8% Overweight**

**29.2% Drank sugared beverage at least once daily**

# Selected Trends

-  Unintentional injury
-  Violence
-  Pregnancy outcomes
-  Suicide

-  Alcohol use
-  Tobacco use
-  Illicit drug use
-  STDs

Arrows denote trends in prevalence over past decade

# **Non-Communicable Diseases: The New Adolescent Health Morbidities**

**Obesity**

**Asthma**

**Stress and Depression**

# **Protective Factors in the Lives of Youth**

# **National Longitudinal Study of Adolescent Health**

## **Add Health Findings**

**Parent-teen connectedness and school connectedness were each independently associated with less involvement with every health risk behavior studied.**

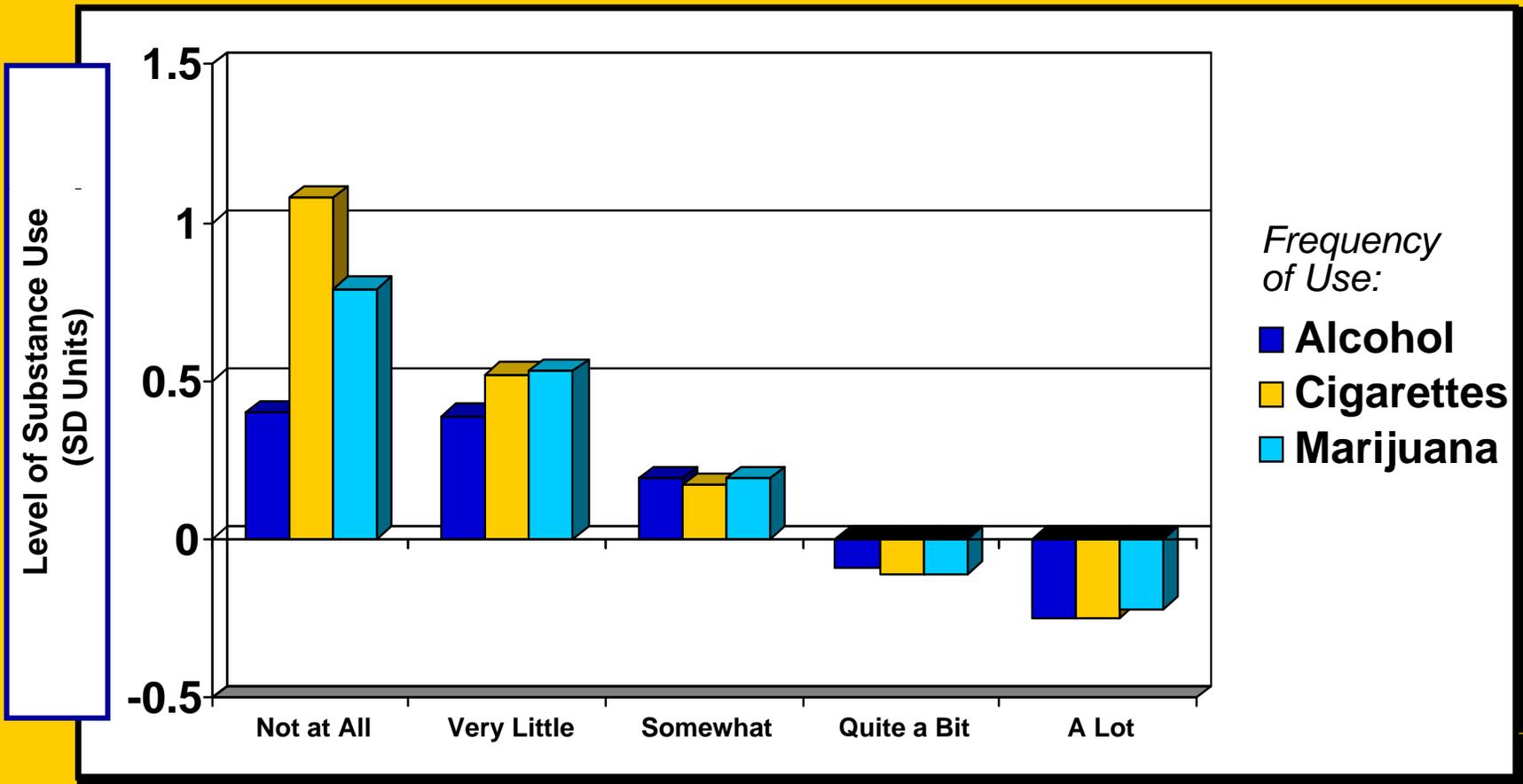
## The association between parent connectedness and adolescent health risk behaviors: 9-12<sup>th</sup> graders

	Suicidality	Violence	Cigarette use	Alcohol use	Age of first sex**
Parental Connectedness	-.24***	-.13***	-.13***	-.14***	.85
Parental presence	-.06***	-.07***	-.06***	-.13***	--
Parental expectations for school	-.08***	-.07***	-.05*	--	--

(parameter estimates, \* = level of significance; \*\*Odds Ratio)

# School Connectedness and Substance Use

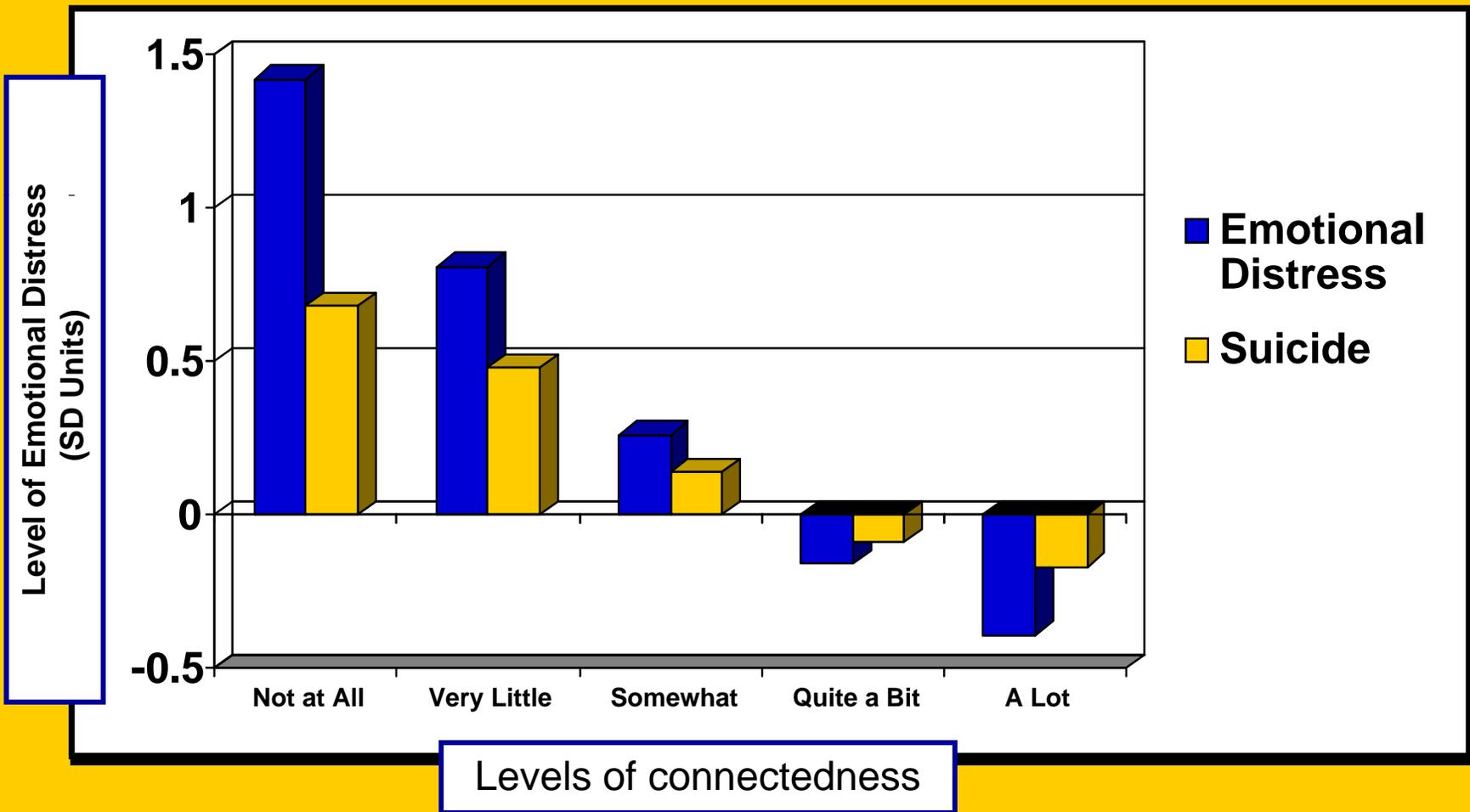
Students who feel connected to school  
are less likely to use substances



Levels of connectedness

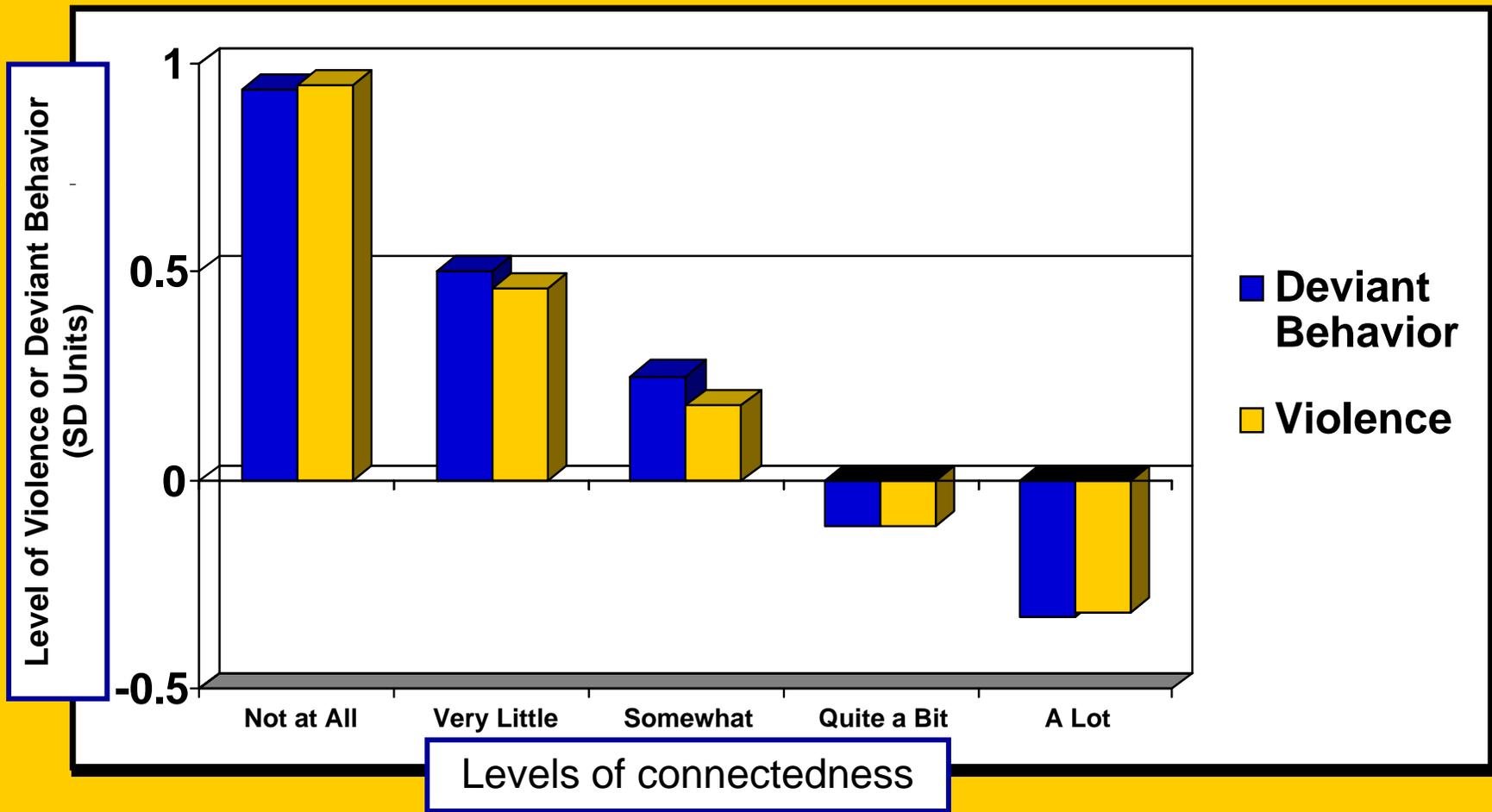
# School Connectedness and Emotional Distress

Students who feel connected to school experience less emotional distress



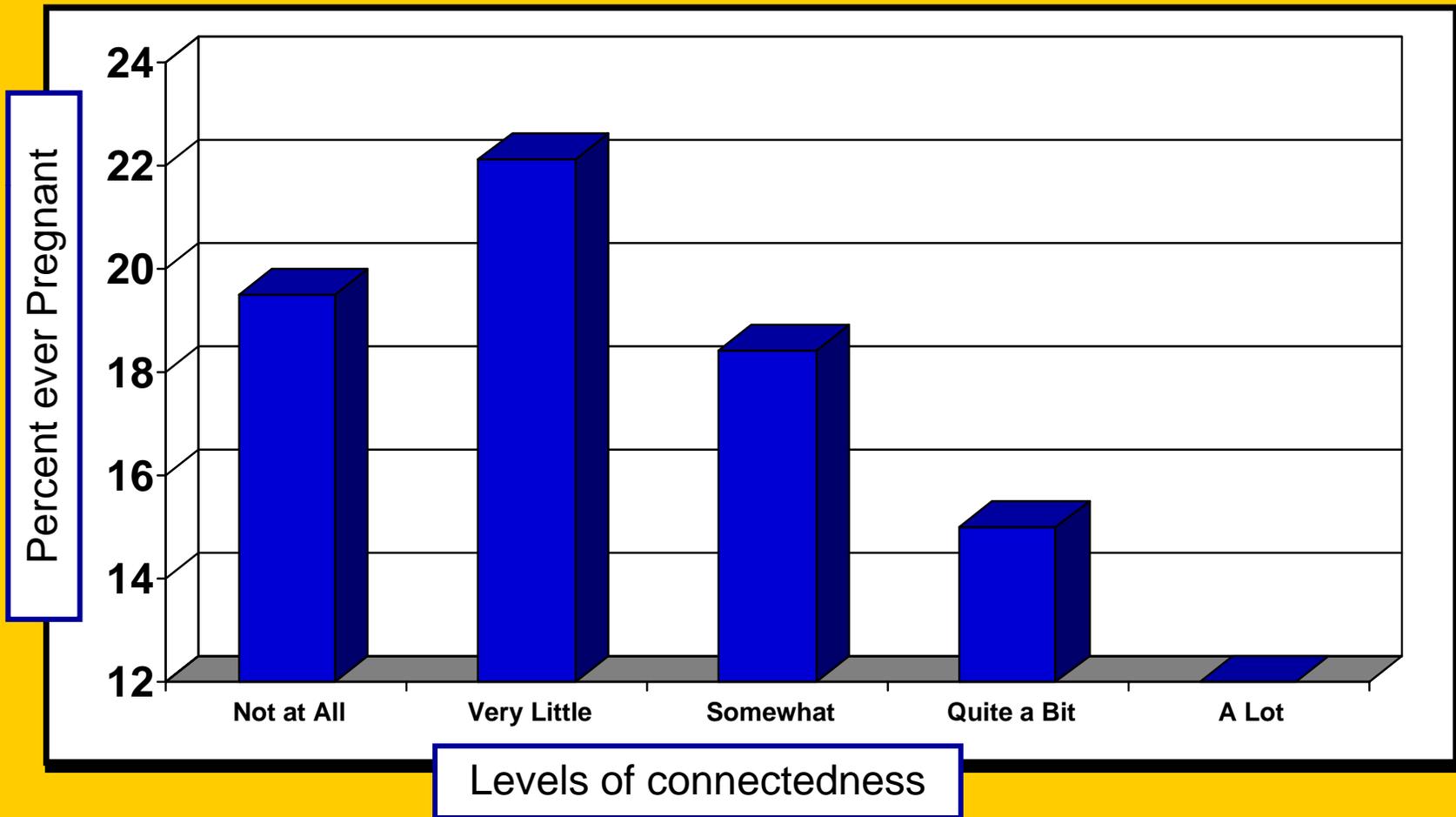
# School Connectedness and Violent or Deviant Behavior

Students who feel connected to school engage in less violent or deviant behavior



# School Connectedness and Pregnancy

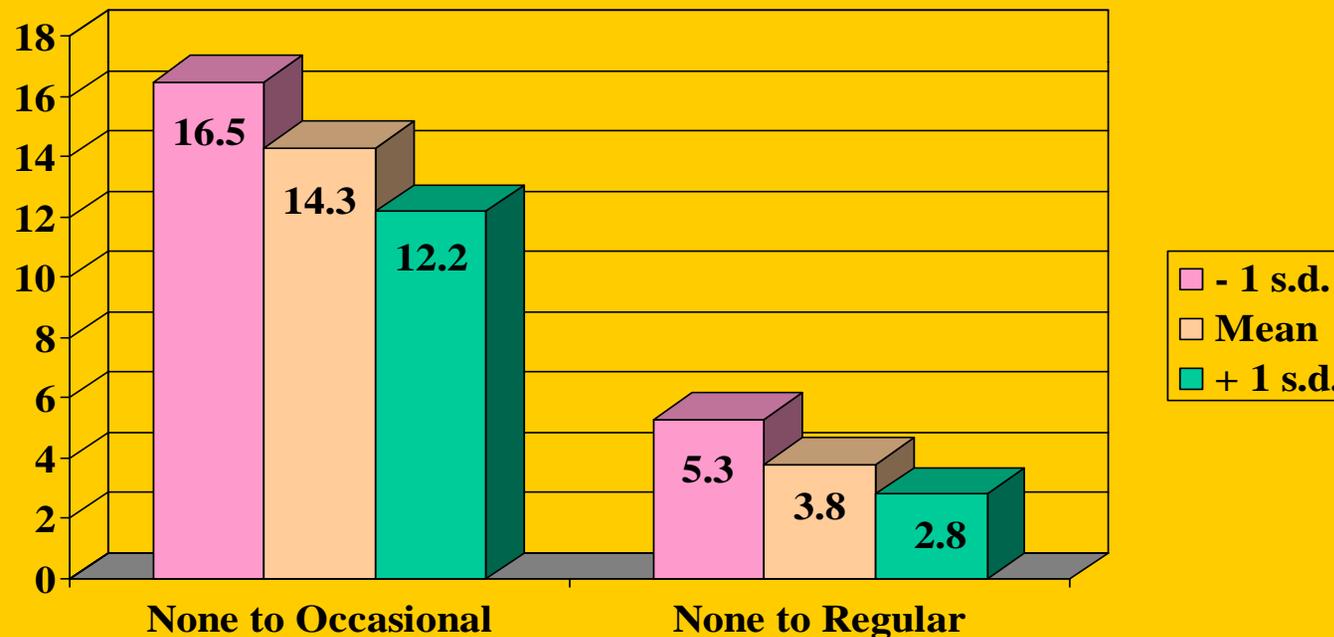
Students who feel connected to school are less likely to become pregnant



**The Relationship between  
School Connectedness and Adolescent  
Health Risk Behaviors across time**

# Initiated Cigarette Use

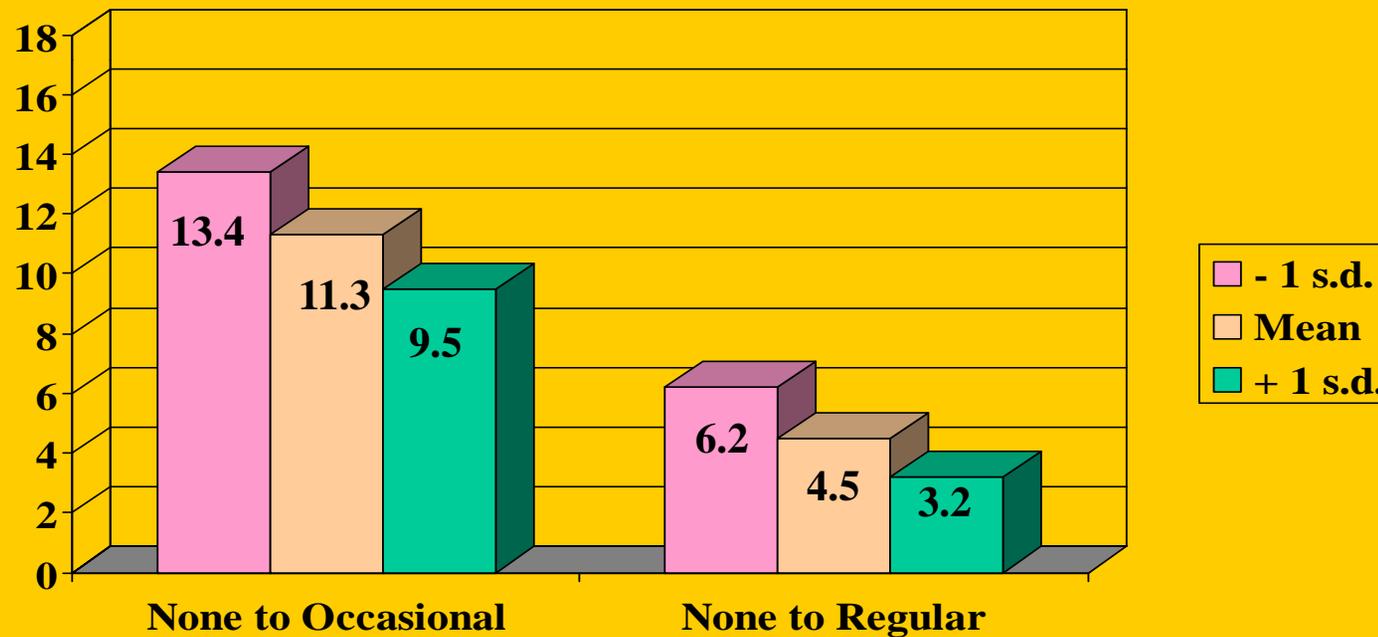
Predicted Percent of cigarette smoking at time 2 among those who at time 1 did not smoke as a function of Teacher Support



Multinomial logit models adjusted for social belonging, race/ethnicity, income, gender, family structure, emotional distress, relationship with parents, hx of peer suicide, hx of family suicide

# Initiated Getting Drunk

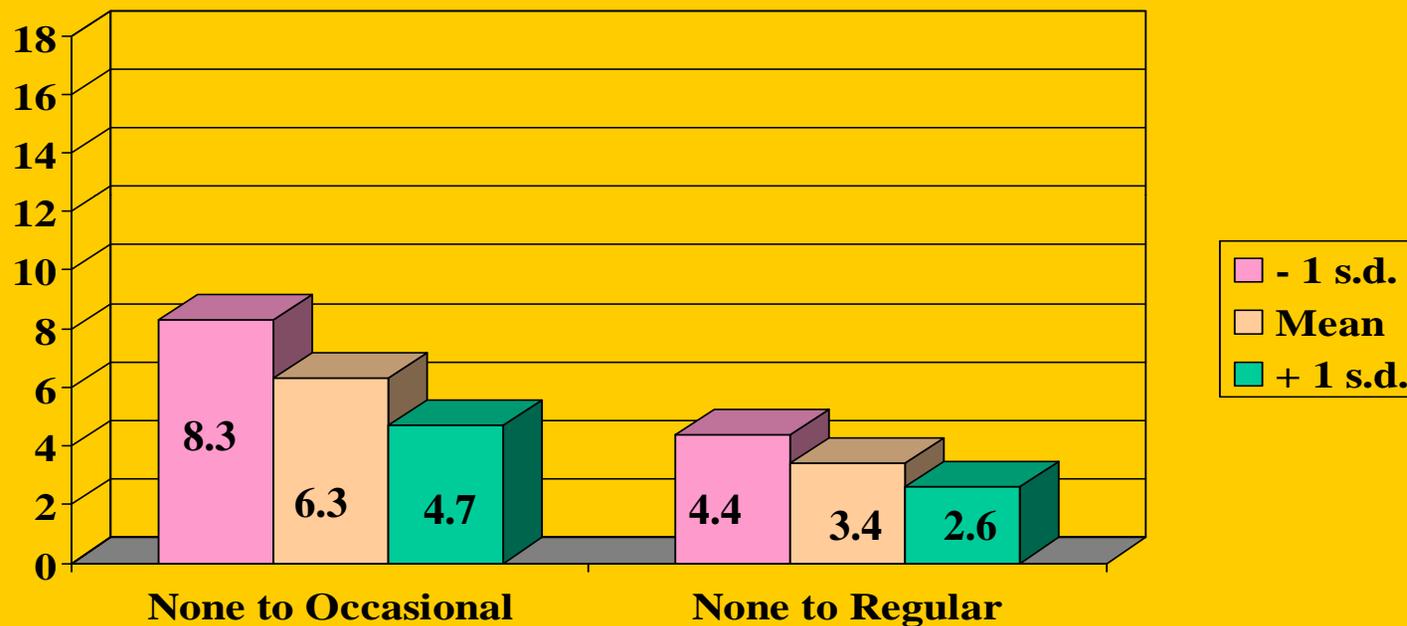
## Predicted Percent Three Levels of Teacher Support



Multinomial logit models adjusted for social belonging, race/ethnicity, income, gender, family structure, emotional distress, relationship with parents, hx of peer suicide, hx of family suicide

# Initiated Marijuana Use

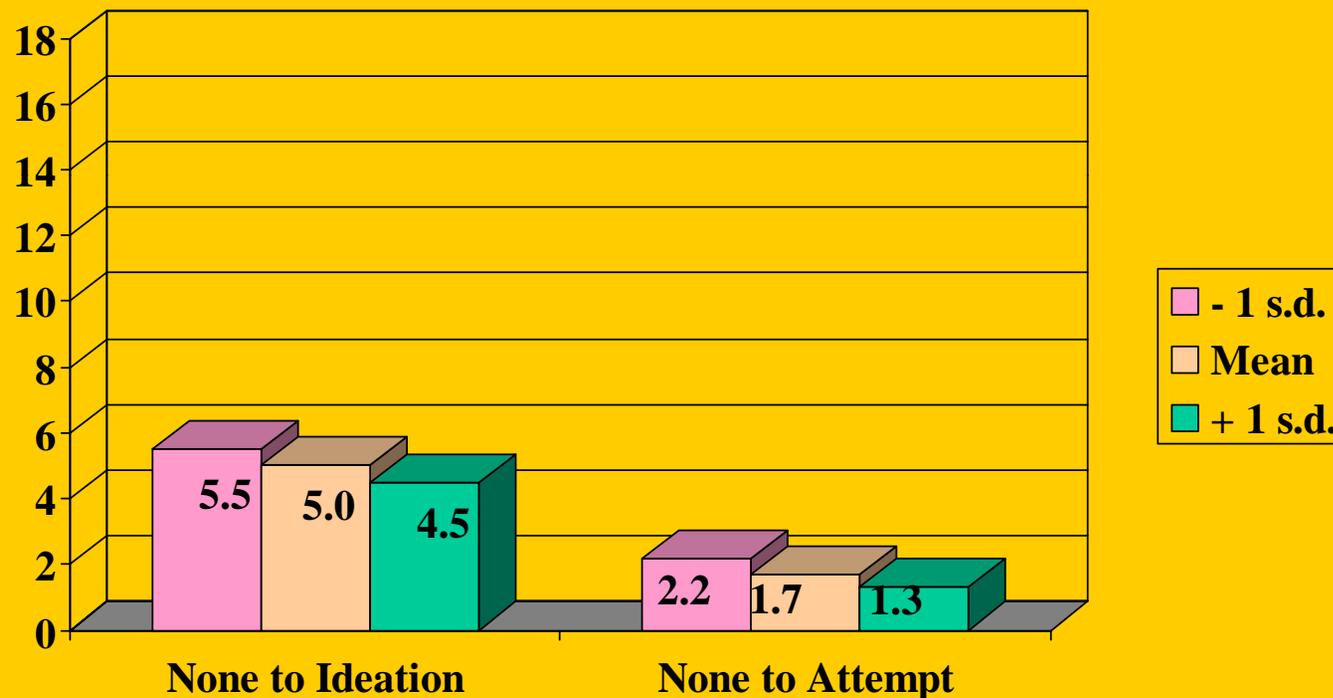
## Predicted Percent at Three Levels of Teacher Support



Multinomial logit models adjusted for social belonging, race/ethnicity, income, gender, family structure, emotional distress, relationship with parents, hx of peer suicide, hx of family suicide

# Seriously Considered or Attempted Suicide

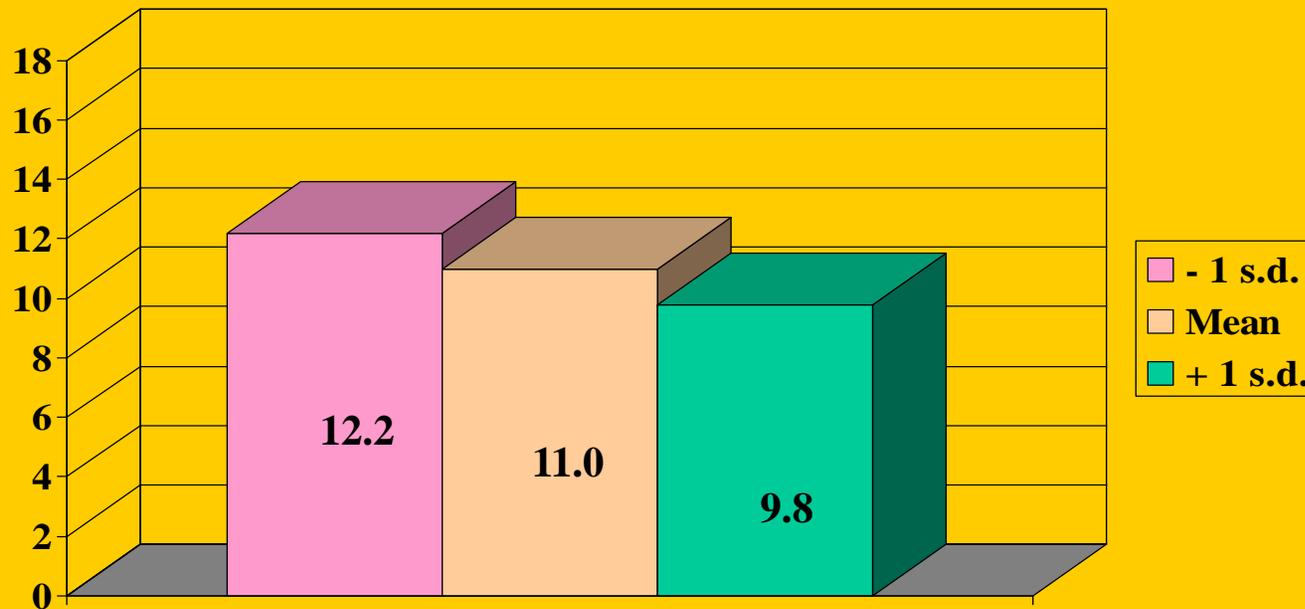
## Predicted Percent at Three Levels of Teacher Support



Multinomial logit models adjusted for social belonging, race/ethnicity, income, gender, family structure, emotional distress, relationship with parents, hx of peer suicide, hx of family suicide

# Initiated Sexual Intercourse

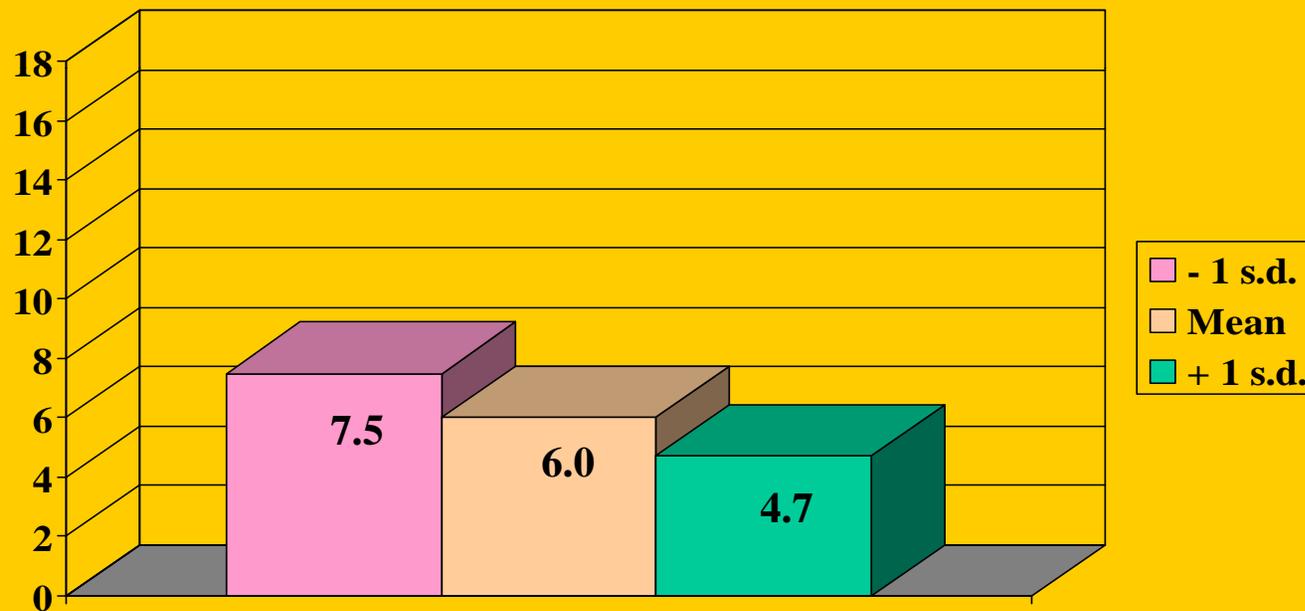
## Predicted Percent at Three Levels of Teacher Support



Multinomial logit models adjusted for social belonging, race/ethnicity, income, gender, family structure, emotional distress, relationship with parents, hx of peer suicide, hx of family suicide

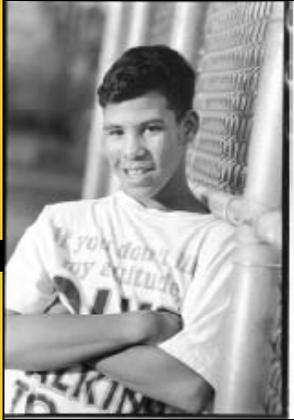
# Initiated Violence

## Predicted Percent at Three Levels of Teacher Support



Multinomial logit models adjusted for social belonging, race/ethnicity, income, gender, family structure, emotional distress, relationship with parents, hx of peer suicide, hx of family suicide

# **Elements of Effective Youth Programs**



Evaluation research has repeatedly shown that *problem reduction* interventions alone directed at youth are rarely effective.

# Effective Youth Programs...

- ... incorporate more elements of positive youth development;
- ... strengthen adult-adolescent relationships appear to have better outcomes;
- ... are long-term with a strong youth participation component.

Roth, Brooks-Gunn, Murray & Foster

# Effective Youth Programs...

- ◆ ... provide for skills training;
- ◆ ... provide life options;
- ◆ ... link youth to social contexts (adults, school, community institutions);
- ◆ ... expand youth participation;
- ◆ ... empower communities to address the issues that confront them.

# Effective Programs for youth...

- ◆ ... provide safety and structure;
- ◆ ... offer belonging and group membership;
- ◆ ... enhance self-worth and contributions;
- ◆ ... facilitate independence and control over one's life;
- ◆ ... support and train for competence;
- ◆ ... encourage closeness with peers and nurturing adults.

# **Human Connections Matter: Parents, Family, School, Community.**

- **Reduces Risk**
- **Motivates behavior change**
- **Improves outcomes for youth**

# **Adolescent Health**

**R U Effective?**