Life course epidemiology and the mental health of adolescents

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Is there an epidemic of child or adolescent depression?

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Background: Both the professional and the general media have recently published concerns about an 'epidemic' of child and adolescent depression. Reasons for this concern include (1) increases in antidepressant prescriptions, (2) retrospective recall by successive birth cohorts of adults, (3) rising adolescent suicide rates until 1990, and (4) evidence of an increase in emotional problems across three cohorts of British adolescents. **Methods:** Epidemiologic studies of children born between 1965 and 1996 were reviewed and a meta-analysis conducted of all studies that used structured diagnostic interviews to make formal diagnoses of depression on representative population samples of participants up to age 18. The effect of year of birth on prevalence was estimated, controlling for age, sex, sample size, taxonomy (e.g., DSM vs. ICD), measurement instrument, and time-frame of the interview (current, 3 months, 6 months, 12 months). **Results:** Twenty-six studies were identified, generating close to 60,000 observations on children born between 1965 and 1996 who had received at least one structured psychiatric interview capable of making a formal diagnosis of depression. Rates of depression showed no effect of year of birth. There was little effect of taxonomy, measurement instrument, or time-frame of interview. The overall prevalence estimates were: under 13, 2.8% (standard error (SE) .5%); 13–18 5.6% (SE .3%); 13–18 girls: 5.9% (SE .3%); 13–18 boys: 4.6% (SE .3%). **Conclusions:** When concurrent assessment rather than retrospective recall is used, there is no evidence for an increased prevalence of child or adolescent depression over the past 30 years. Public perception of an 'epidemic' may arise from heightened awareness of a disorder that was long under-diagnosed by clinicians. **Keywords:** Depression, child, adolescent, prevalence, meta-analysis, epidemic. **Abbreviations:** DISC: Diagnostic Interview Schedule for Children; CIDI: Composite International Diagnostic Interview; SDI: Short Depression Interview; K-SADS: Schedule for Affective Disorders and Schizophrenia, child version; CAS: Child and Adolescent Schedule; CAPA: Child and Adolescent Psychiatric Assessment; IOW: Isle of Wight interview; DAWBA: Development and Well-Being Assessment.

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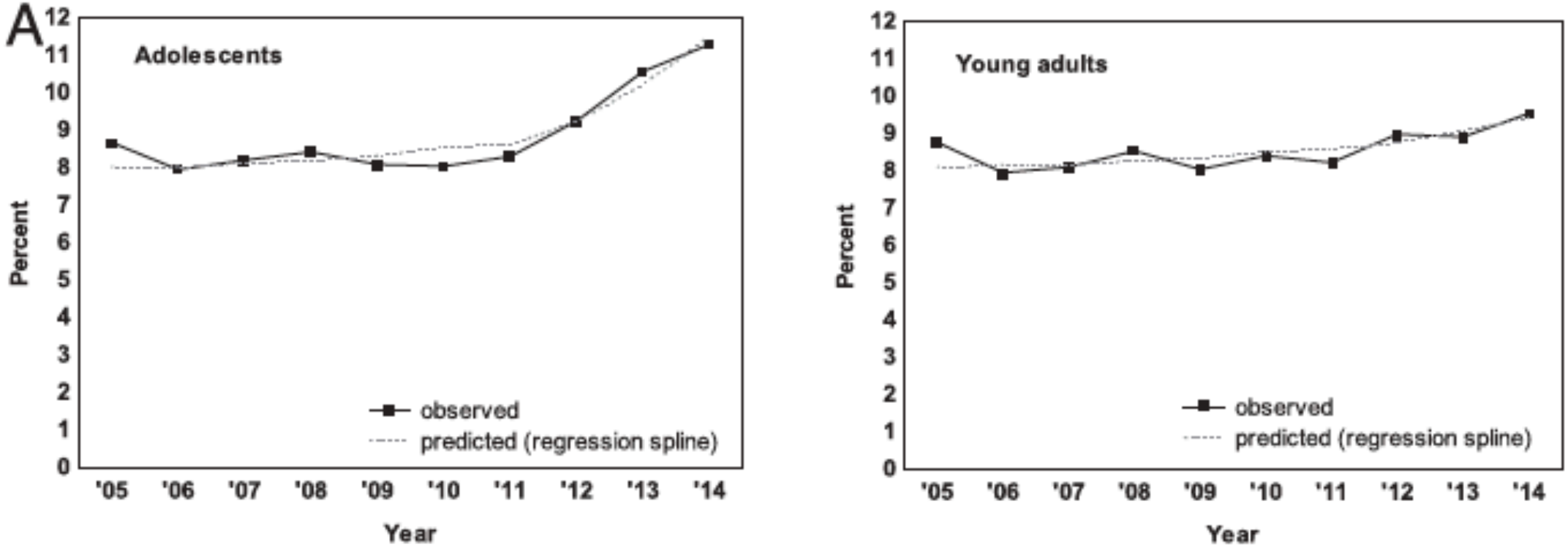
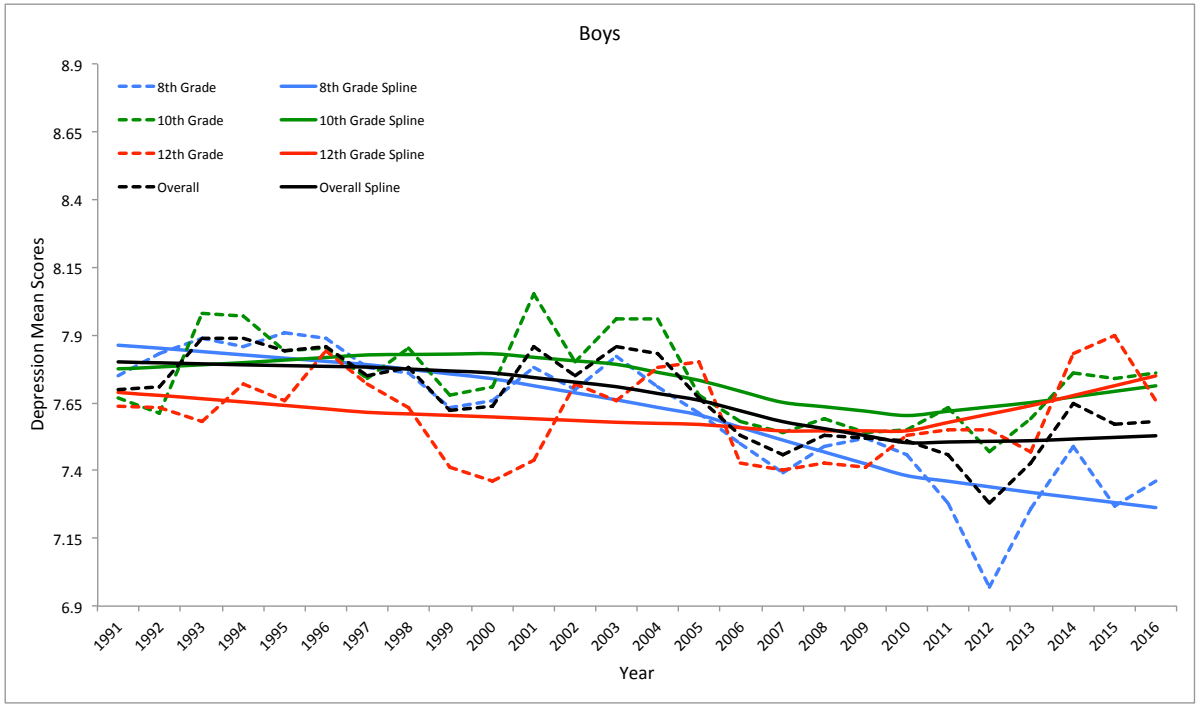
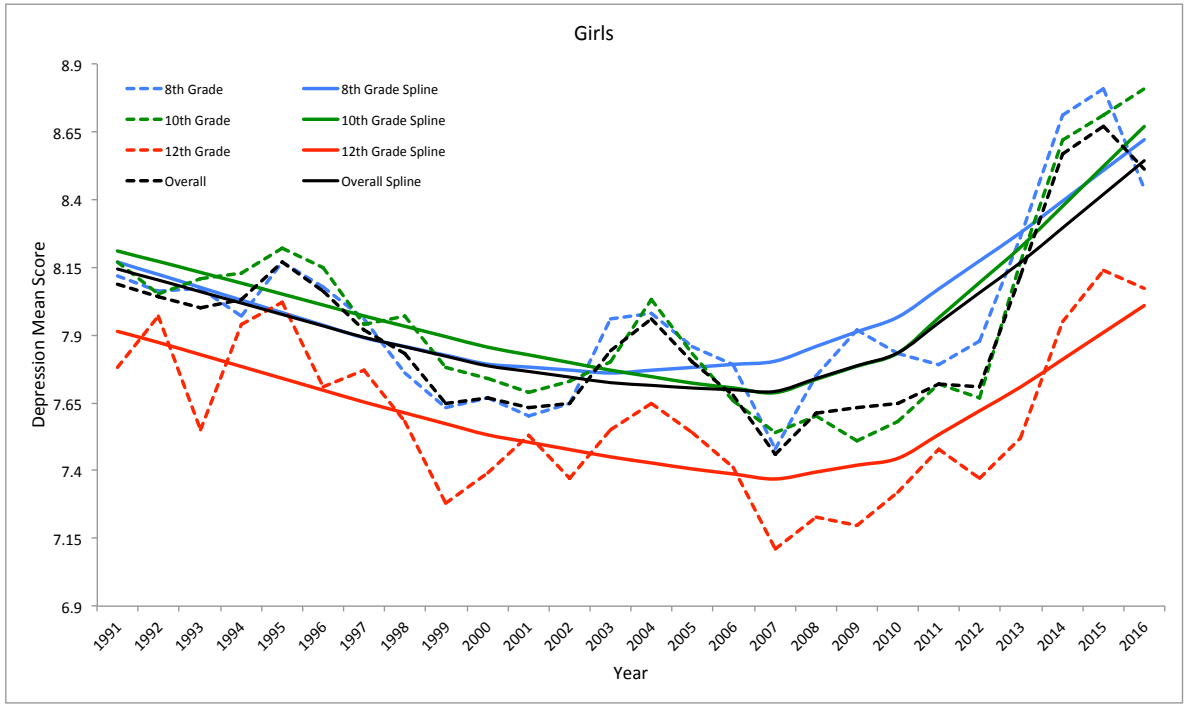
Major depressive episodes in adolescents and young adults, NSDUH 2005-2014



Mojtabai R, Olfson M, Han B. National trends in the prevalence and treatment of depression in adolescents and young adults. Pediatrics, 2016.

Depressive affect among high school students, 1991 through 2016





Keyes KM, Gary D, O'Malley P, Schulenberg J. Depressive affect is increasing among US adolescents: trends from 1991-2016. *Under review.*

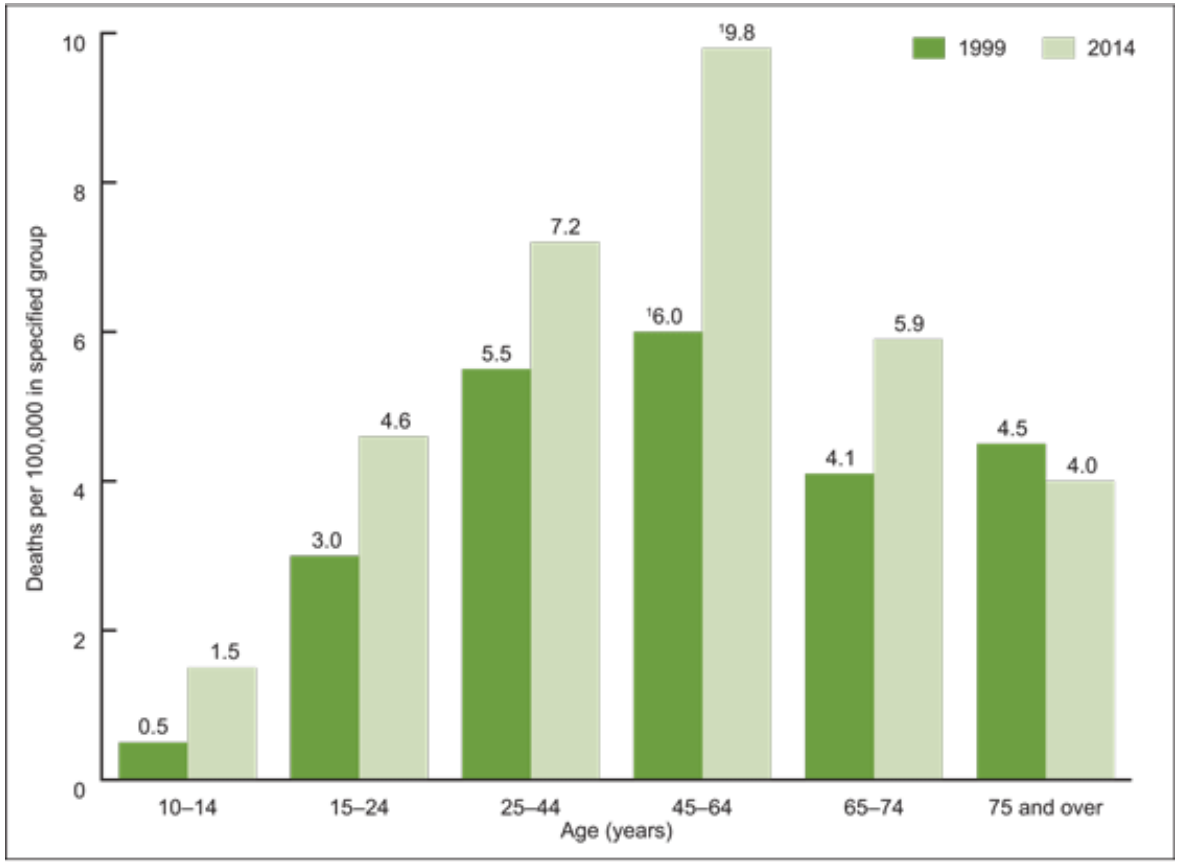
Suicidal behavior among US adolescents, 1991-2016

Percentages													Change from 1991–2015[1]	Change from 2013–2015[2]
1991	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015		
Seriously considered attempting suicide (during the 12 months before the survey)														
29.0	24.1	24.1	20.5	19.3	19.0	16.9	16.9	14.5	13.8	15.8	17.0	17.7	Decreased 1991—2015 Decreased 1991—2009 Increased 2009—2015	No change
Made a plan about how they would attempt suicide (during the 12 months before the survey)														
18.6	19.0	17.7	15.7	14.5	14.8	16.5	13.0	11.3	10.9	12.8	13.6	14.6	Decreased 1991—2015 Decreased 1991—2009 Increased 2009—2015	No change
Attempted suicide (one or more times during the 12 months before the survey)														
7.3	8.6	8.7	7.7	8.3	8.8	8.5	8.4	6.9	6.3	7.8	8.0	8.6	Decreased 1991—2015	No change
Attempted suicide that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse (during the 12 months before the survey)														
1.7	2.7	2.8	2.6	2.6	2.6	2.9	2.3	2.0	1.9	2.4	2.7	2.8	No change 1991—2015	No change

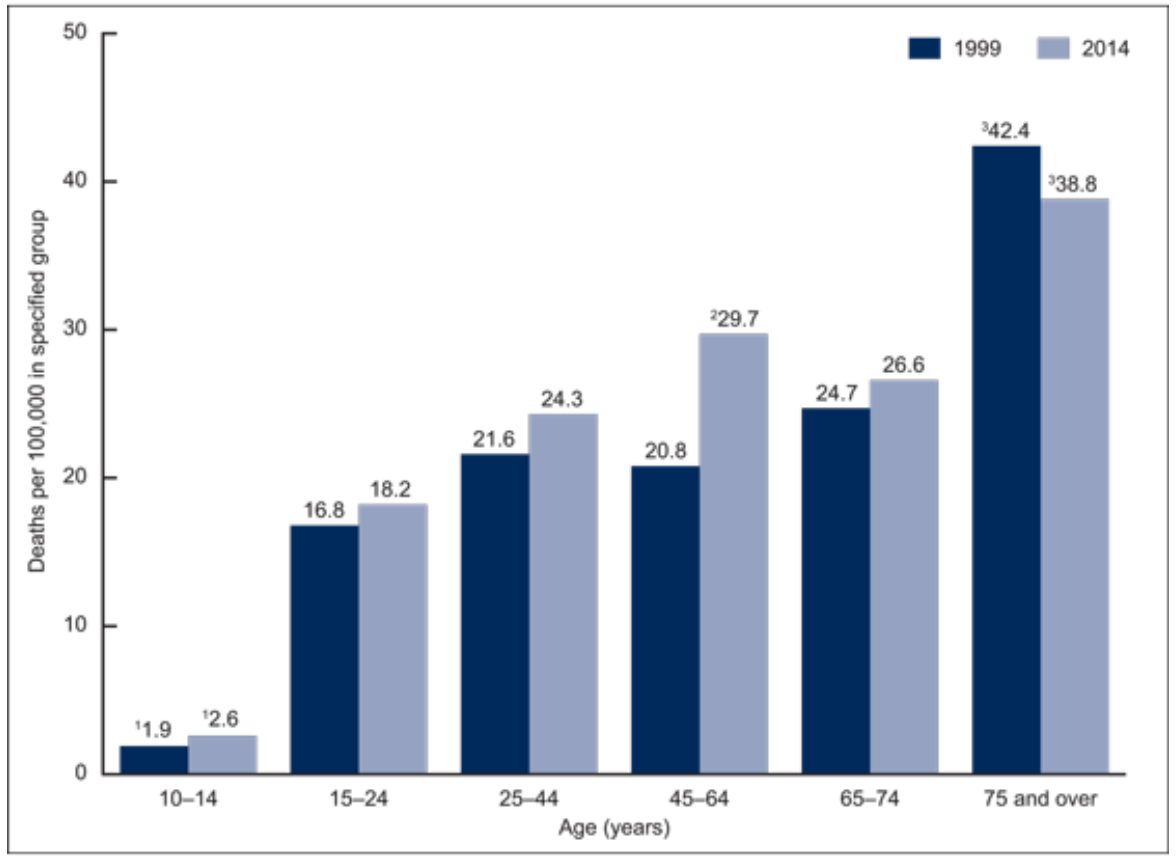
Youth Risk Behavior Survey.
https://www.cdc.gov/healthyyouth/data/yrbs/pdf/trends/2015_us_suicide_trend_yrbs.pdf

Suicide in the United States, 1999-2014

Girls and women



Boys and men



Curtin SC, Warner M, Hedegaard H. Increase in suicide in the United States, 1999–2014. NCHS data brief, no 241. Hyattsville, MD: National Center for Health Statistics. 2016.

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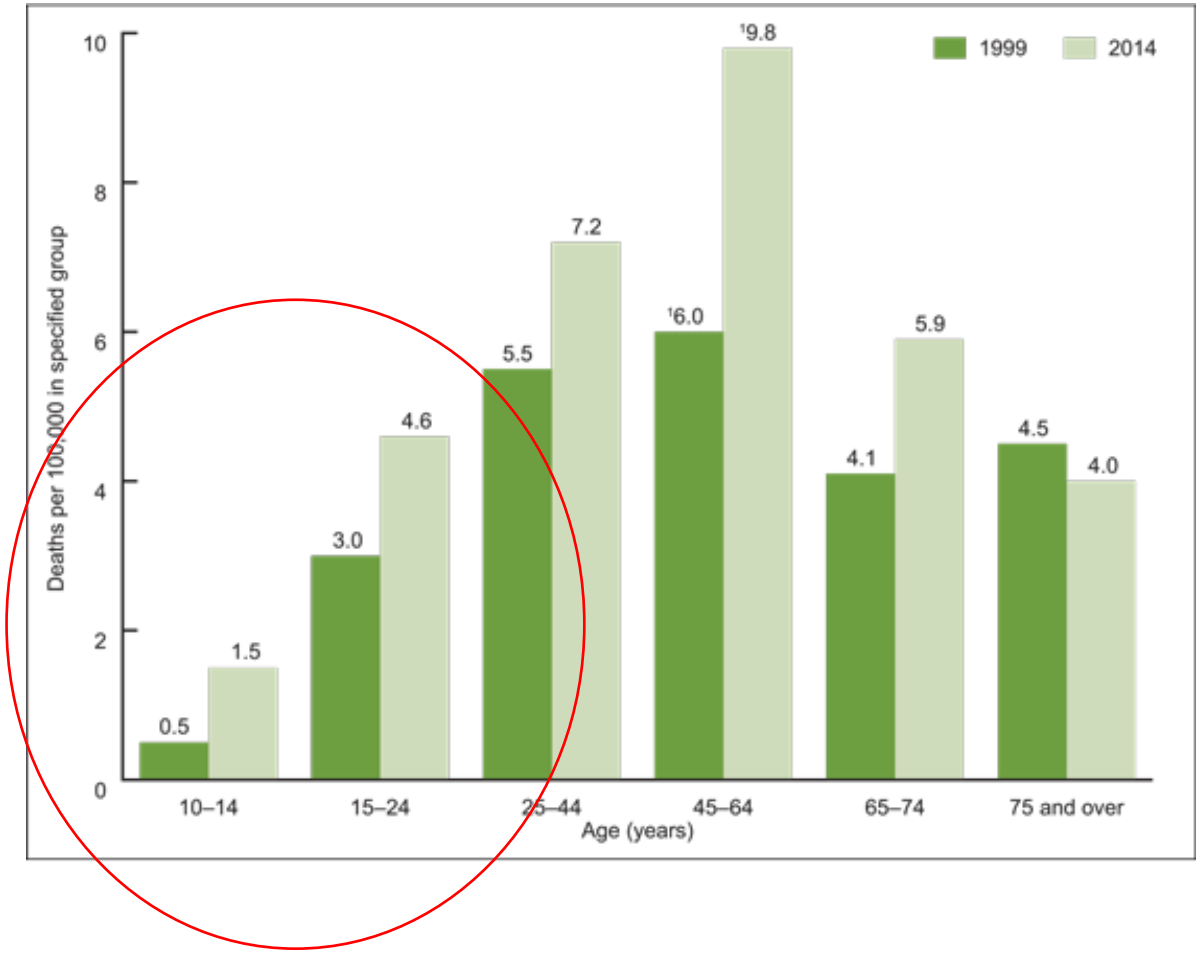

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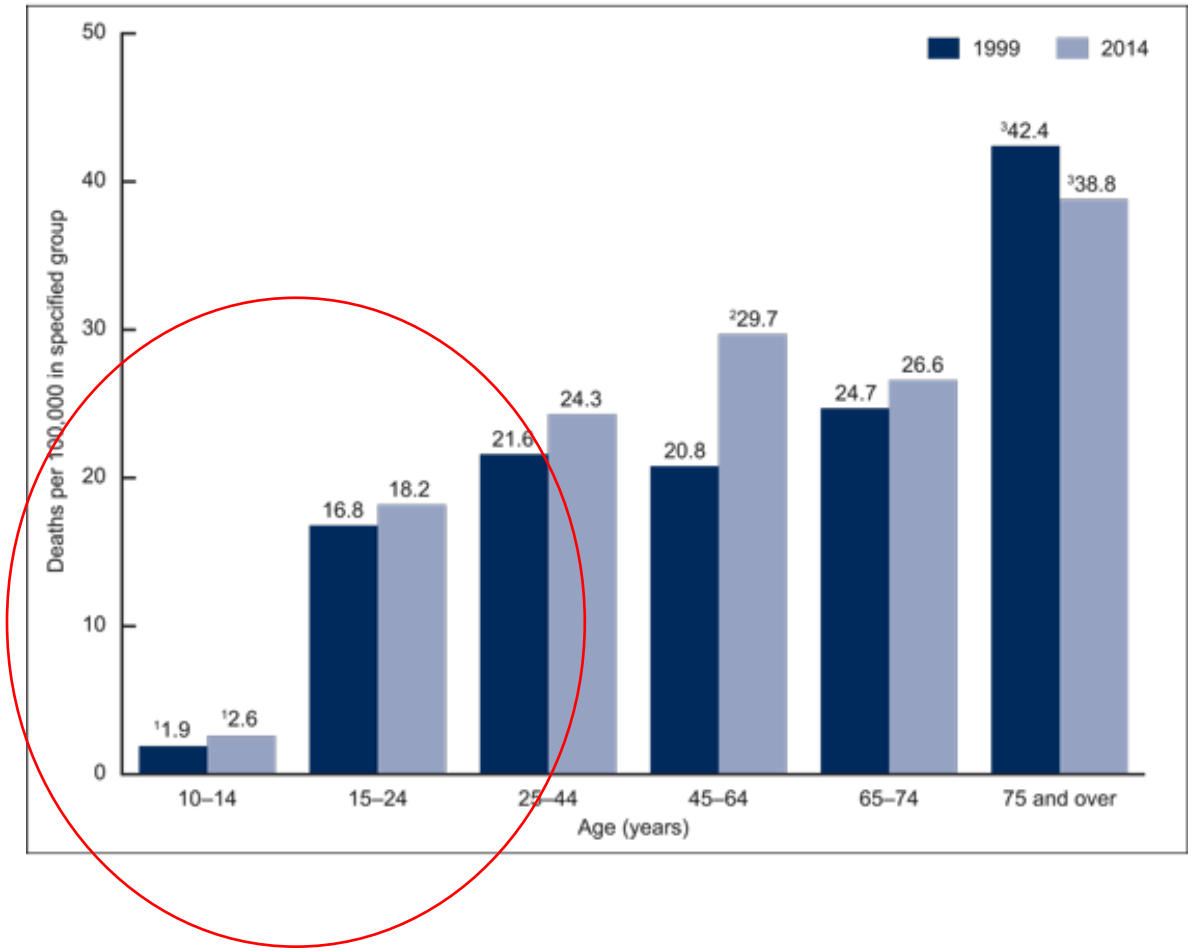
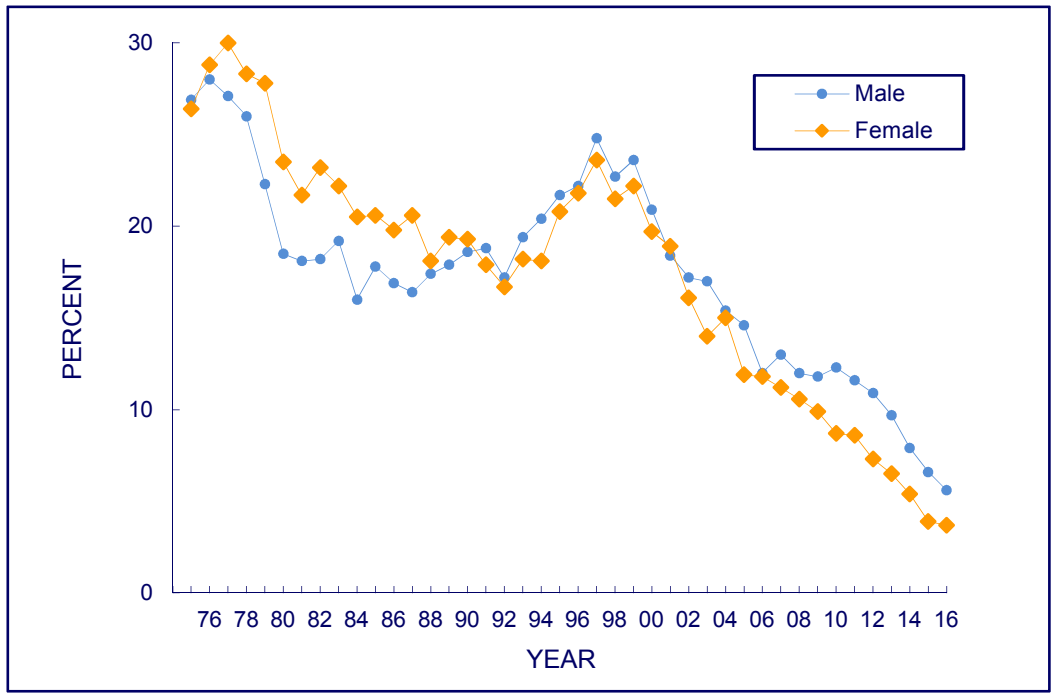


Curtin SC, Warner M, Hedegaard H. Increase in suicide in the United States, 1999–2014. NCHS data brief, no 241. Hyattsville, MD: National Center for Health Statistics. 2016.

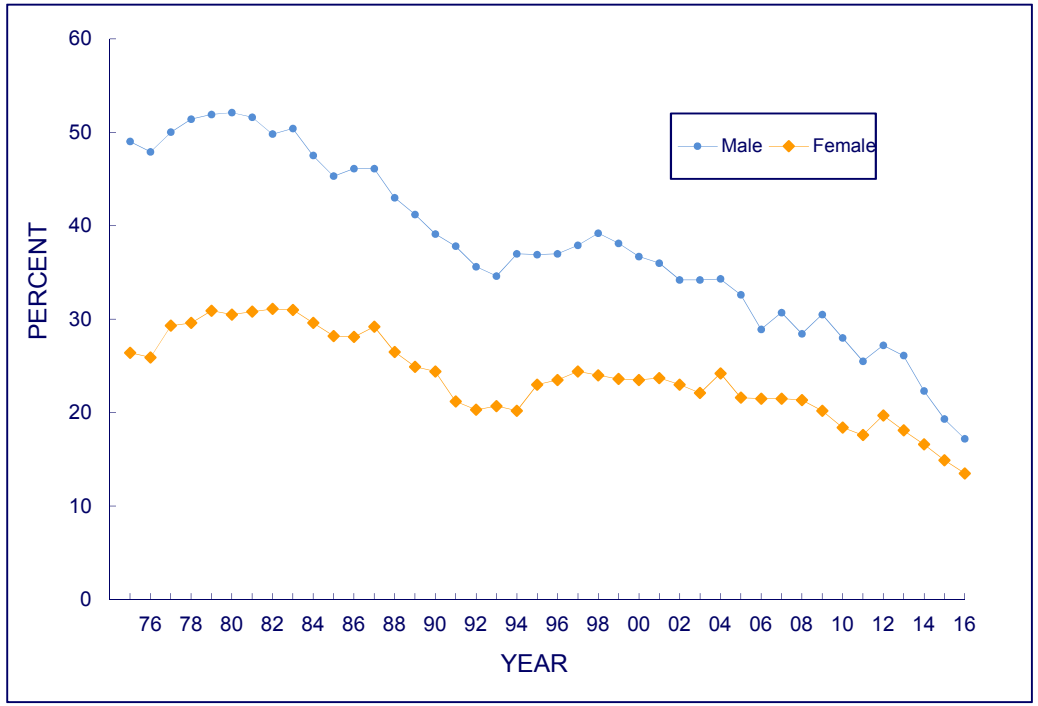
Substance use: a different picture altogether

Substance use among adolescents is at a 40-year low

Daily use of cigarettes

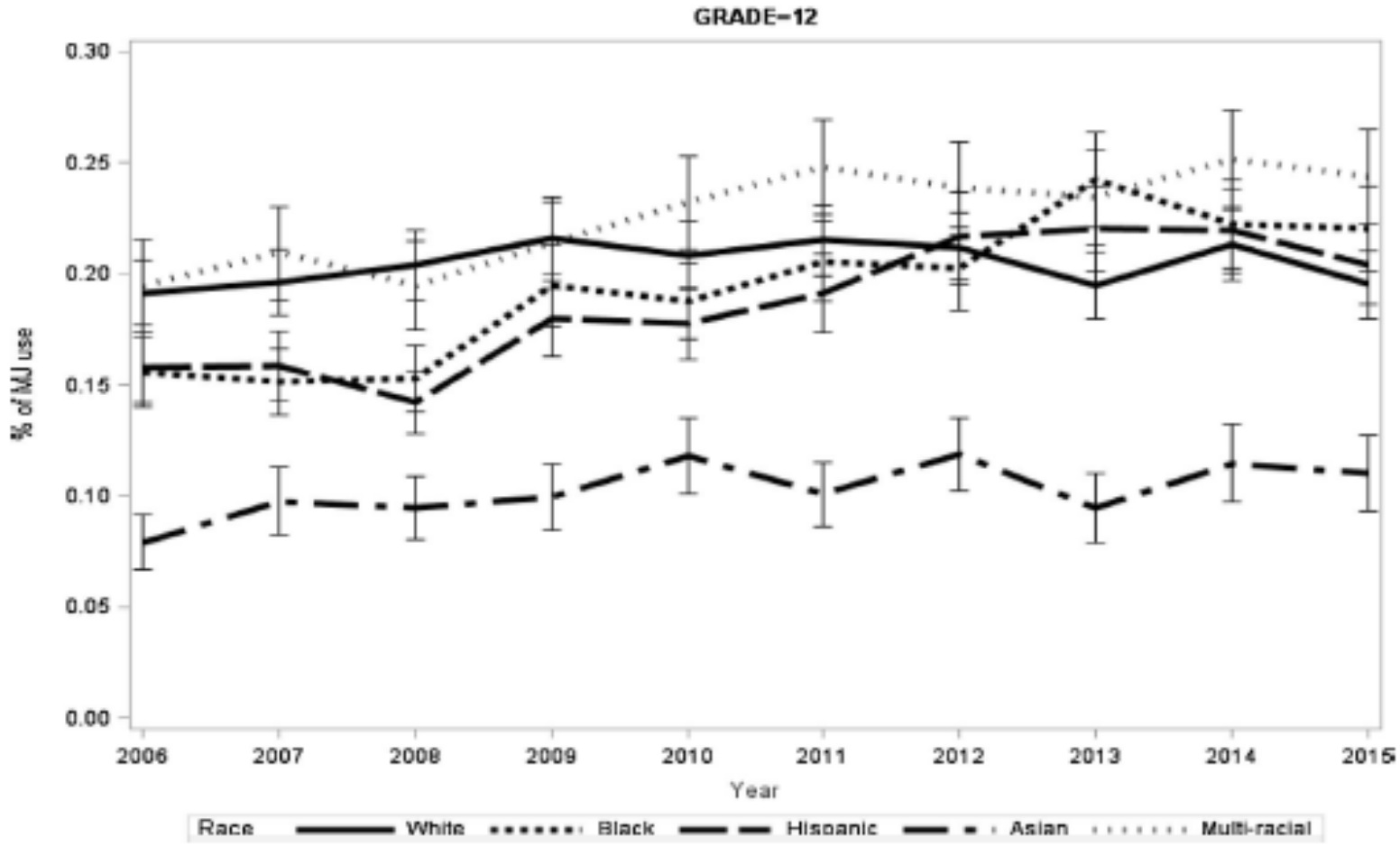


Past two-week binge drinking



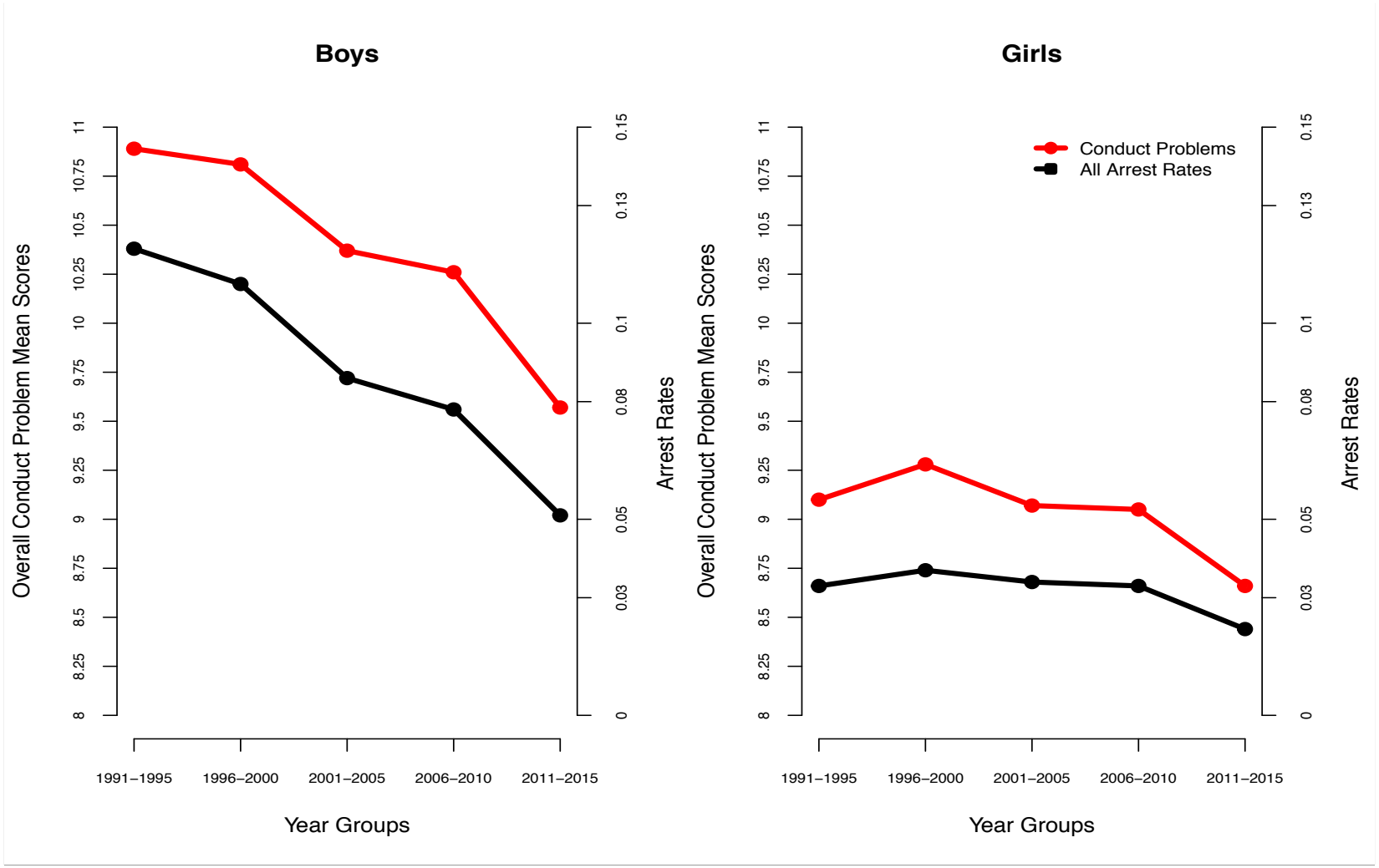
Miech RA, Johnston LD, O'Malley PM, Bachman JG. Schulenberg JE, Patrick ME. 2017. Monitoring the Future national survey results on drug use, 1975-2016: Volume I, secondary school students. Ann Arbor: Institute for Social Research, The University of Michigan.

National trends mask subgroup heterogeneity



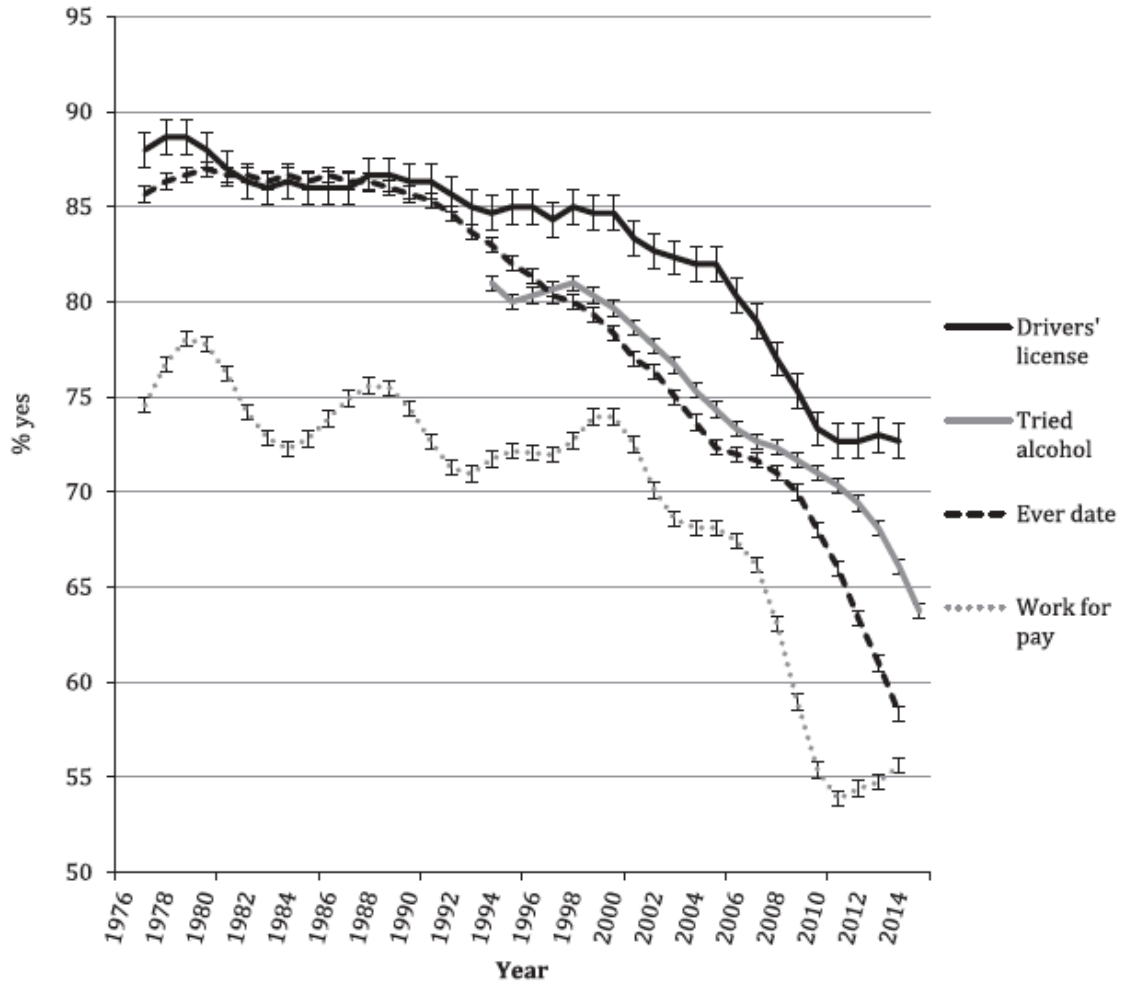
Keyes KM, Wall M, Feng T, Cerda M, Hasin DS. Race/ethnicity and marijuana use in the United States: Diminishing differences in the prevalence of use, 2006-2015. Drug and Alcohol Dependence, 2017

Declines in substance use are part of broader declines in problem behavior



Keyes KM, Gary DS, Beardslee J, Prins SJ, O'Malley PM, Rutherford C, Schulenberg J. Age, period, and cohort effects in conduct problems among American adolescents from 1991 though 2015. American Journal of Epidemiology, 2017.

Percentage of US 12th graders who have a driver's license, have ever tried alcohol, who every go out on dates, and who work for pay, 1976-2016



Twenge JM, Park H. The Decline in Adult Activities Among U.S. Adolescents, 1976-2016. Child Development, 2017.

Summary

- Evidence is accumulating that population distributions of adolescent mental health and substance use are changing in the United States (and elsewhere), especially for girls
- Understanding the determinants of population distributions is imperative for the next decade of research

"Go Ahead, Millennials, Destroy Us." New York Times, March 2nd, 2018

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