
Trends in adolescent risk behaviours and relationships between risk behaviours: comparison of two West of Scotland cohorts

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Sweeting et al. BMC Public Health 2011, 11:829
<http://www.biomedcentral.com/1471-2458/11/829>

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RESEARCH ARTICLE

Changes in the socio-demographic patterning of late adolescent health risk behaviours during the 1990s: analysis of two West of Scotland studies

Helen Sweeting^{1*}, Caroline Jackson² and Sally Haw^{2,3}

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Clustering of substance use and sexual risk behaviour in adolescence: analysis of two cohort studies

Caroline Jackson,¹ Helen Sweeting,² Sally Haw^{1,3}

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ABSTRACT

Objectives: The authors aimed to examine whether changes in health risk behaviour rates alter the relationships between behaviours during adolescence,

ARTICLE SUMMARY

Article focus

- Previous studies have reported clustering of risk

Actually ...

Part 1:
**Trends in adolescent risk behaviours:
comparison of two West of Scotland cohorts**

Part 2:
**Relationships between risk behaviours:
comparison of two West of Scotland cohorts**

Time-trends data on young people's health-risk behaviours - problems

Data on time-trends in health-risk behaviours among young people mainly via repeat cross-sectional school-based health and behaviour surveys. But ...

- Surveys include different age groups and different behavioural measures.
- Less known about time-trends among *older* adolescents or young adults.
- Analyses often limited by small numbers.
- Analyses often use broad age categories (e.g. 16-24) – so mask any differences between those at either end of the age spectrum.

Time-trends data on young people's health-risk behaviours - evidence

- Gender convergence in smoking, drinking and drug use during 1990s and into 2000s in many middle / higher-income countries.
- UK survey found increase in early sexual initiation among females up to the mid-1990s, after which the rate appeared to stabilise.

Our study

- Describes changes between 1990 and 2003 in late adolescent smoking, drinking, illicit drug use and sexual risk behaviour.
- It uses self-report data collected from two West of Scotland studies.
- Importantly, the two studies:
 - surveyed participants from exactly the same geographical area;
 - of (almost) the same age;
 - using identical (or near identical) self-report health-risk behaviour measures.

Our study – a bit more

- Describes changes between 1990 and 2003 in smoking, drinking and illicit drug use and sexual risk behaviour, both overall and stratified according to gender and SES.
- Uses more than one measure of each behaviour (e.g. any smoking; heavier smoking).
- Looks at whether relatively small age differences between the cohorts make a difference.
- Takes account of any age, gender and SES differences between the cohorts.

West of Scotland data sources

Age	“Twenty-07”	“11 to 16/16+”
11		
13		
15		
18-19		

West of Scotland data sources

Age	“Twenty-07”	“11 to 16/16+”
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11		
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13		
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15	1987	
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18-19	1990	
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**'earlier' /
1987/1990
study**

West of Scotland data sources

Age	“Twenty-07”	“11 to 16/16+”
11		1994
13		1996
15	1987	1999
18-19	1990	2003
	‘earlier’ / 1987/1990 study	‘later’ / 1999/2003 study

West of Scotland data sources

Age	“Twenty-07”	“11 to 16/16+”
11		1994
13		1996
15	1987	1999
18-19	1990 (N=908)	2003 (N=1006)
	‘earlier’ / 1987/1990 study	‘later’ / 1999/2003 study

West of Scotland data sources

Age	“Twenty-07”	“11 to 16/16+”
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11		1994
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13		1996
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15	1987	1999
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18-19

BEHAVIOUR RATES

**‘earlier’ /
1987/1990
study**

**‘later’ /
1999/2003
study**

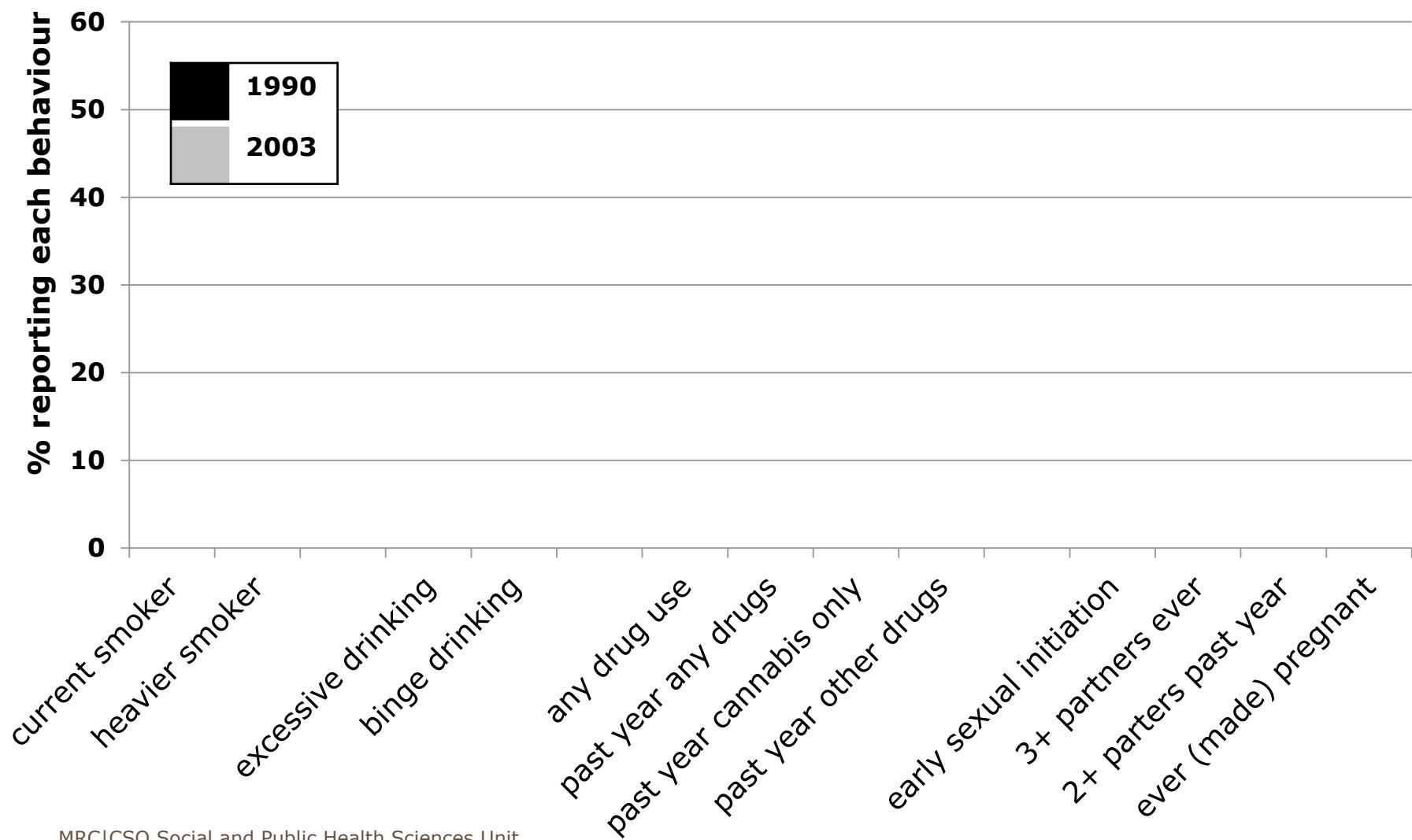
West of Scotland data sources

Age	"Twenty-07"	"11 to 16/16+"
11		1994
13		1996
15		1998
18-19	1990 (N=908)	2003 (N=1006)
	ASSOCIATIONS BETWEEN BEHAVIOURS	
	'earlier' / 1987/1990 study	'later' / 1999/2003 study

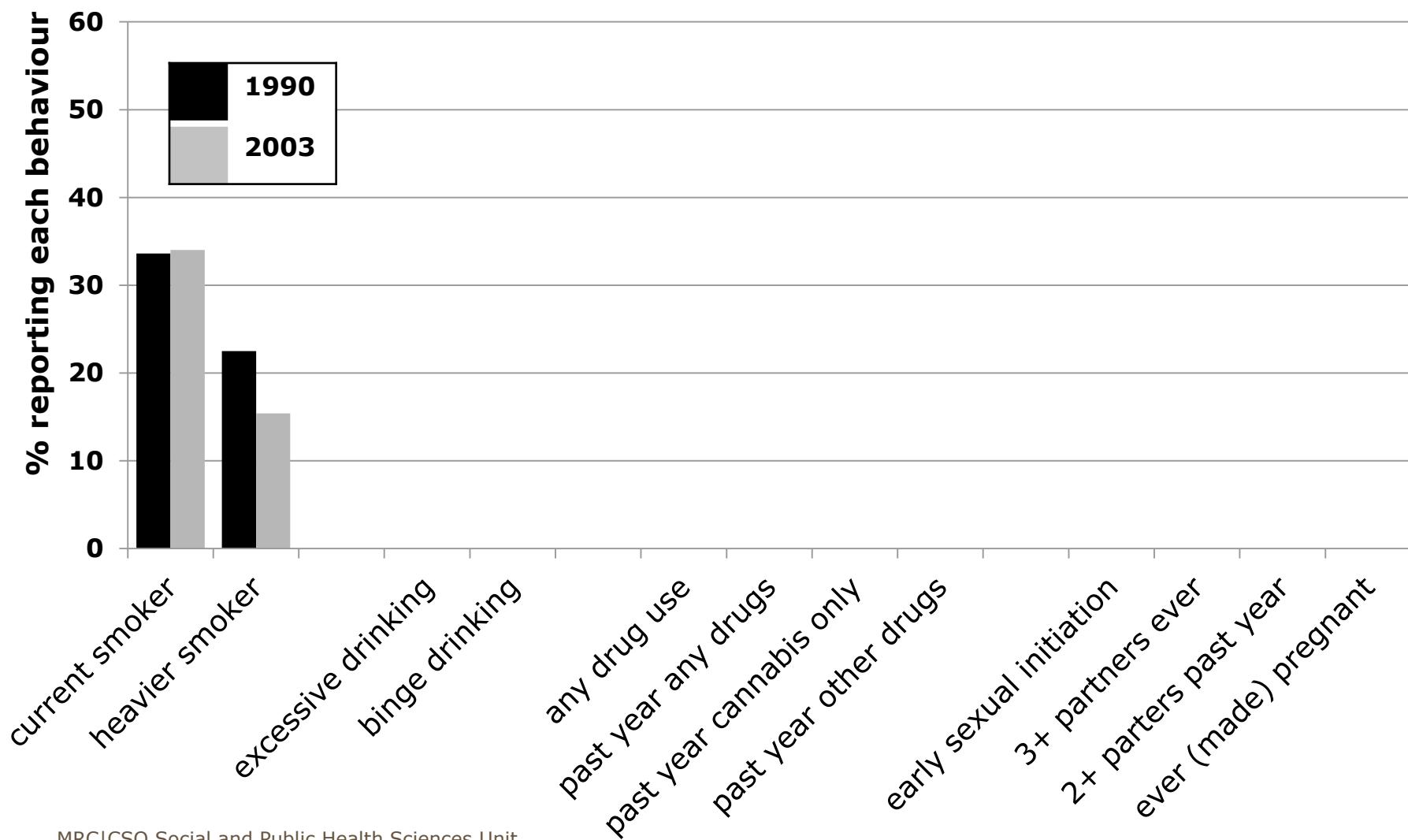
Age 18-19 self-report measures

- **Current smoker**
- **Heavier smoking** = 70+ cigarettes a week
- **Excessive drinking** = ≥ 22 (men) / ≥ 15 (women) units in past week
- **Binge drinking** = ≥ 9 (men) / ≥ 7 (women) units any day in past week
- **Any drug use**
- **Any drugs in past year**
- **Cannabis only in past year** = cannabis and no other drugs
- **Other drug in past year** = other drug(s) (with or without cannabis)
- **Early sexual initiation** = first sexual intercourse at 15 years or younger
- **Three or more sexual partners ever**
- **Two or more sexual partners last year**
- **Ever (made) pregnant**

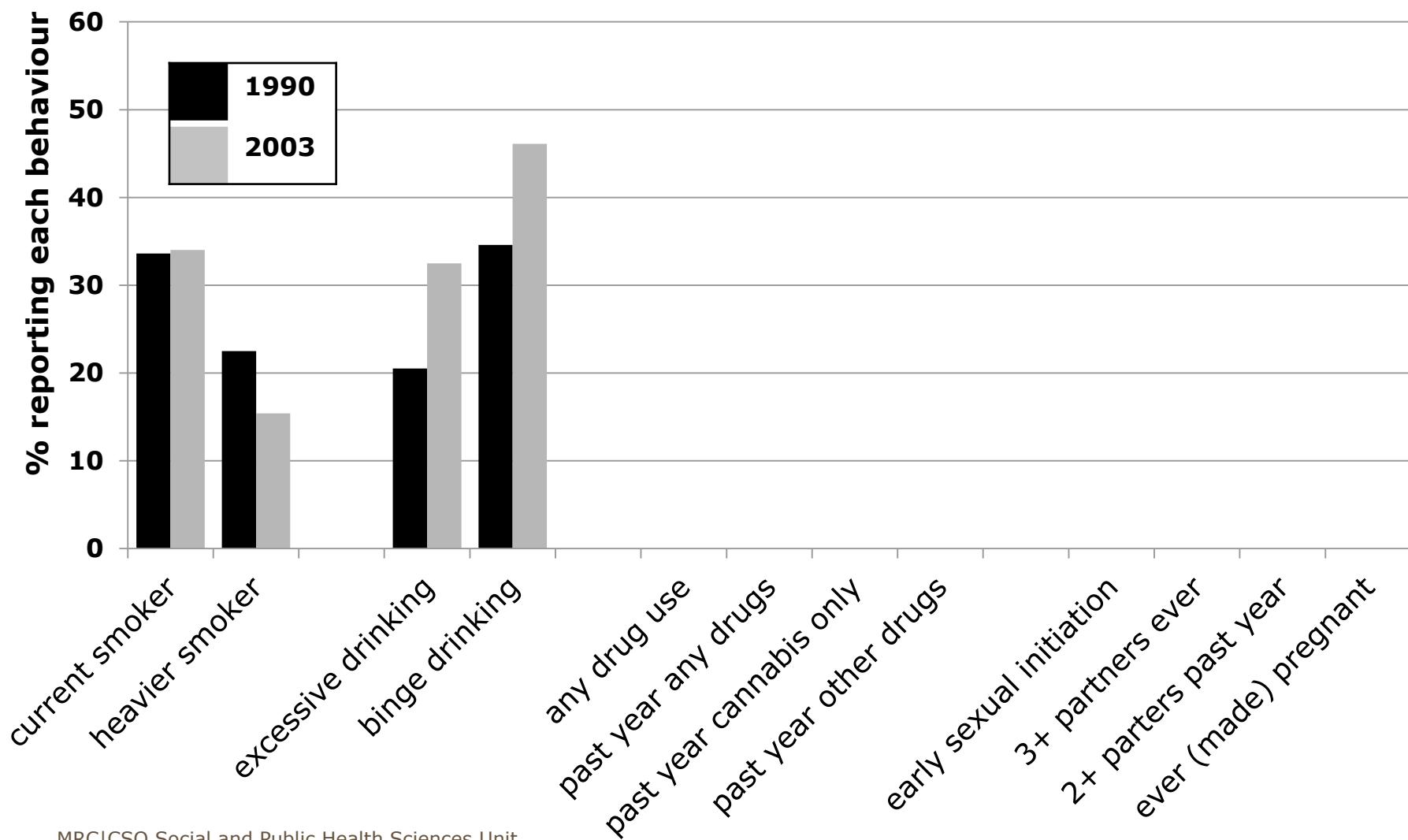
Rates of health-risk behaviours - 1990 & 2003



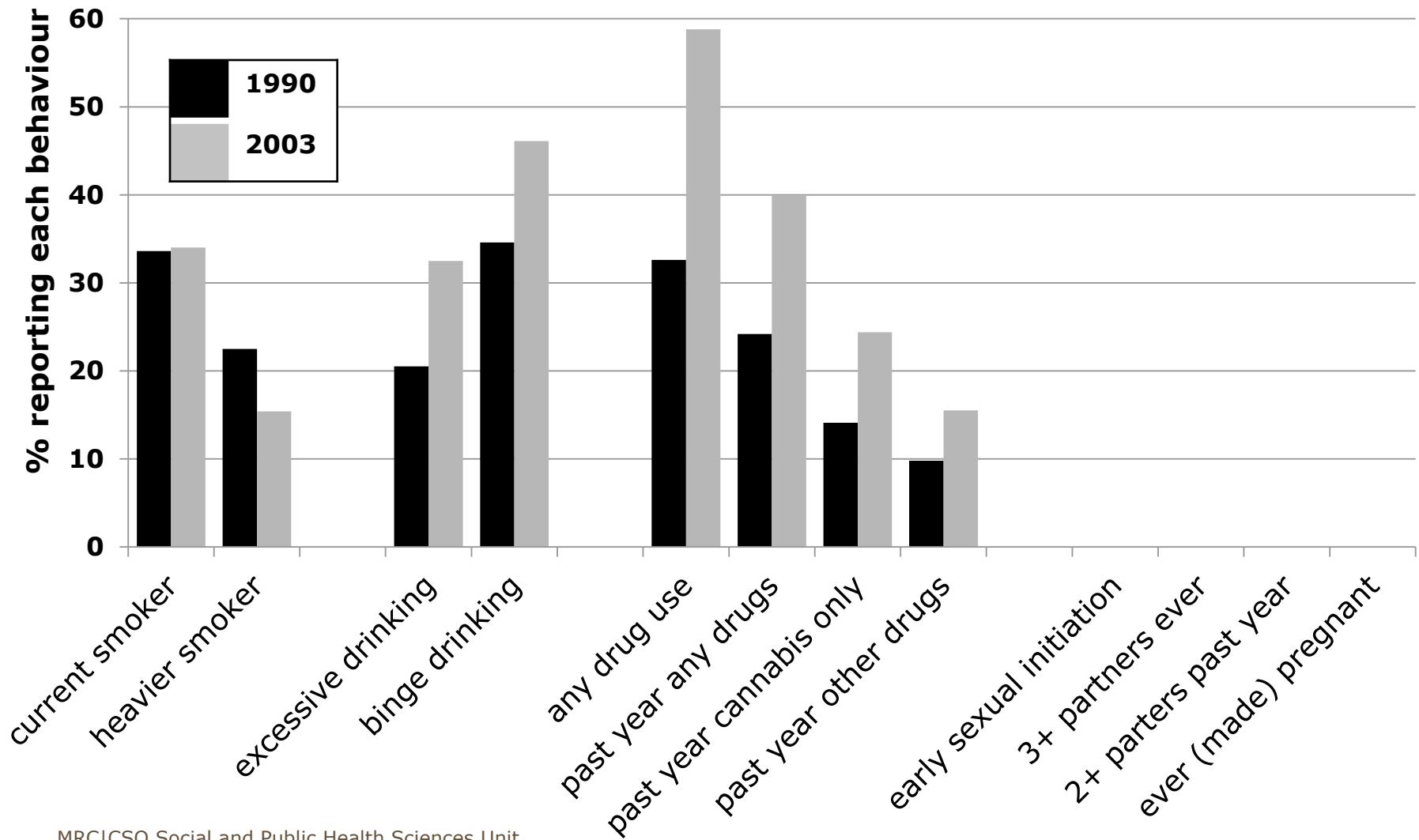
Rates of health-risk behaviours - 1990 & 2003



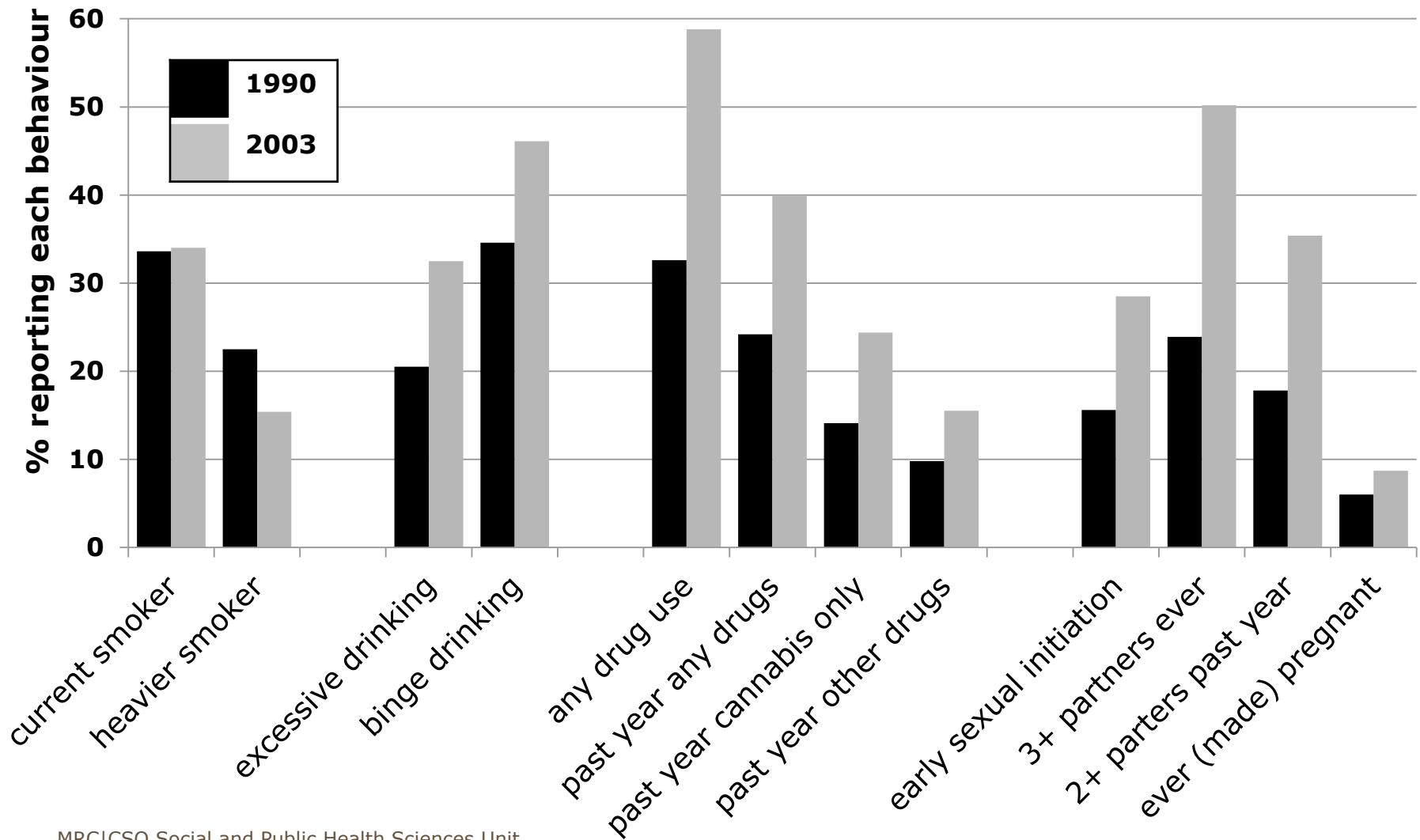
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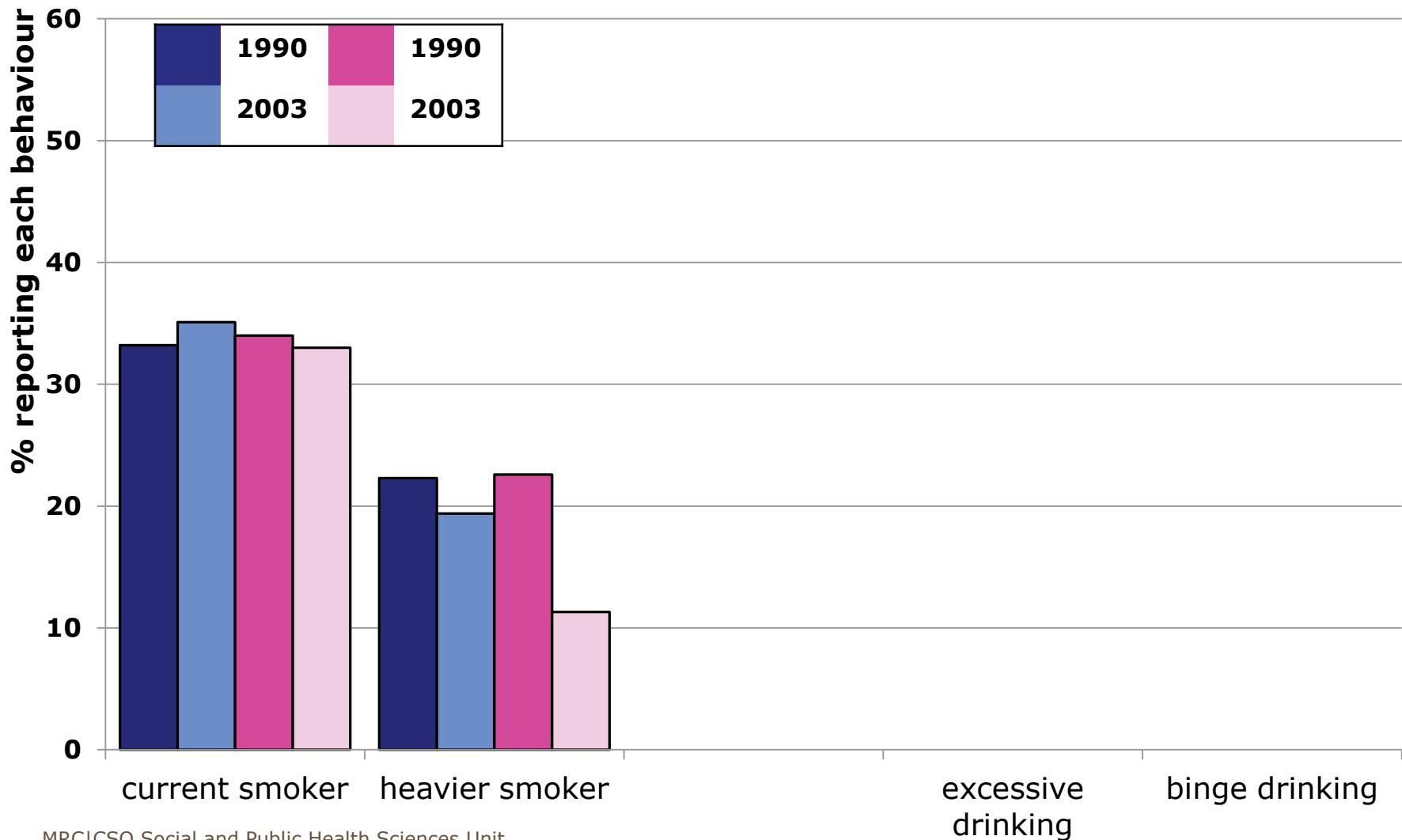
Rates of health-risk behaviours - 1990 & 2003



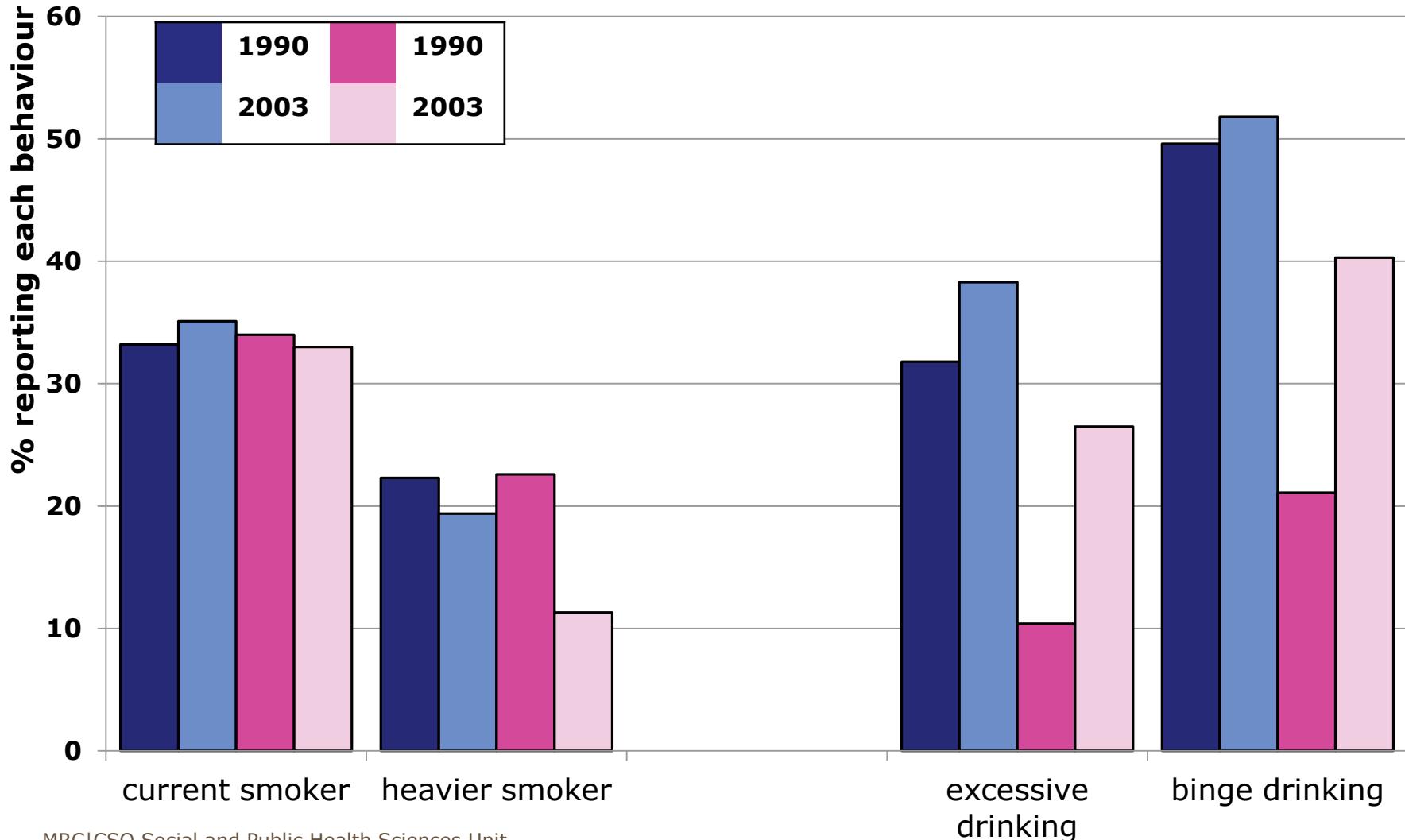
Rates of health-risk behaviours - 1990 & 2003



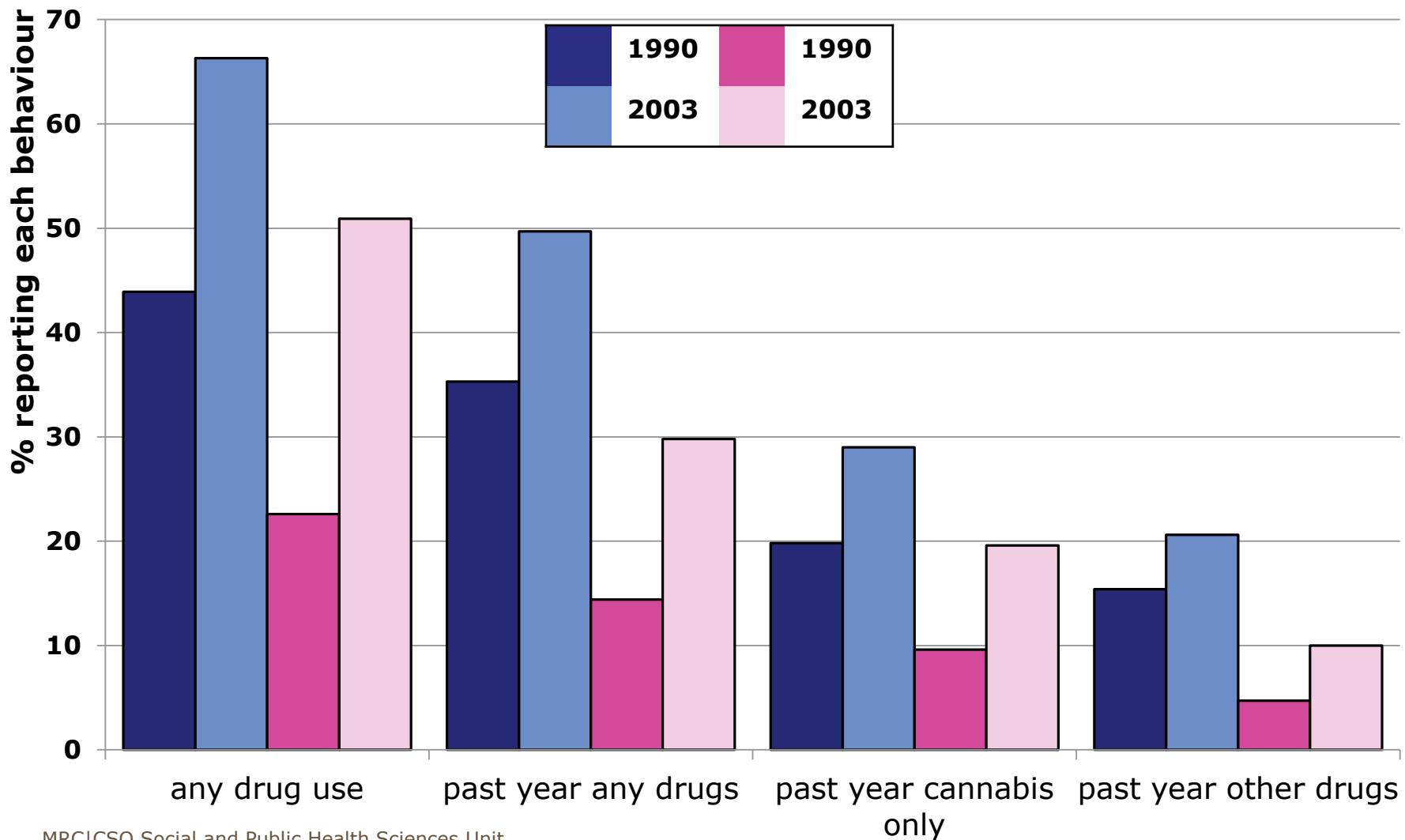
Rates of smoking & drinking - 1990 & 2003



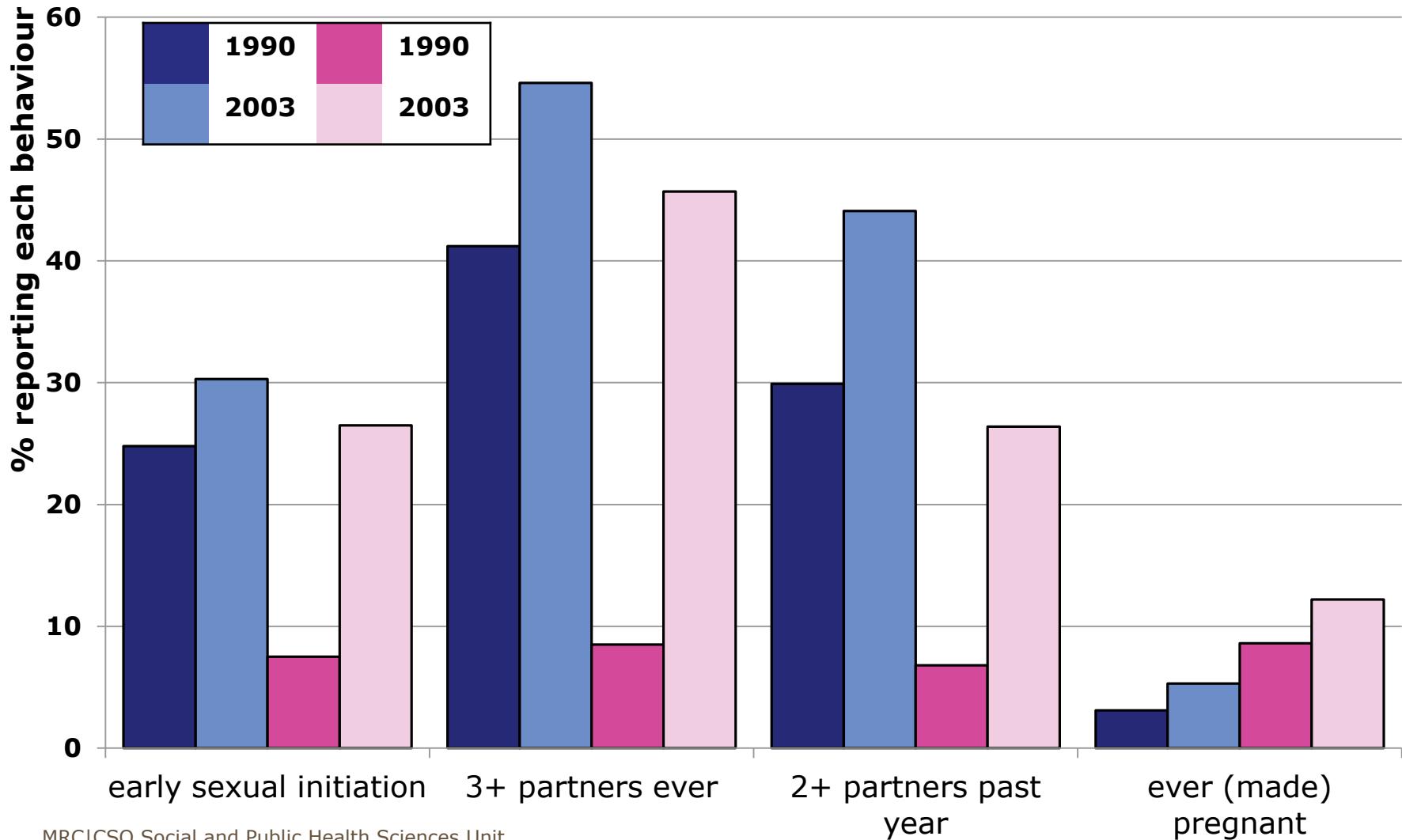
Rates of smoking & drinking - 1990 & 2003



Rates of drug use - 1990 & 2003



Rates of sexual risk behaviours – 1990 & 2003



Something to think about

Age differences between the cohorts:

Earlier cohort = 18 years 7 months, SD ± 4 months

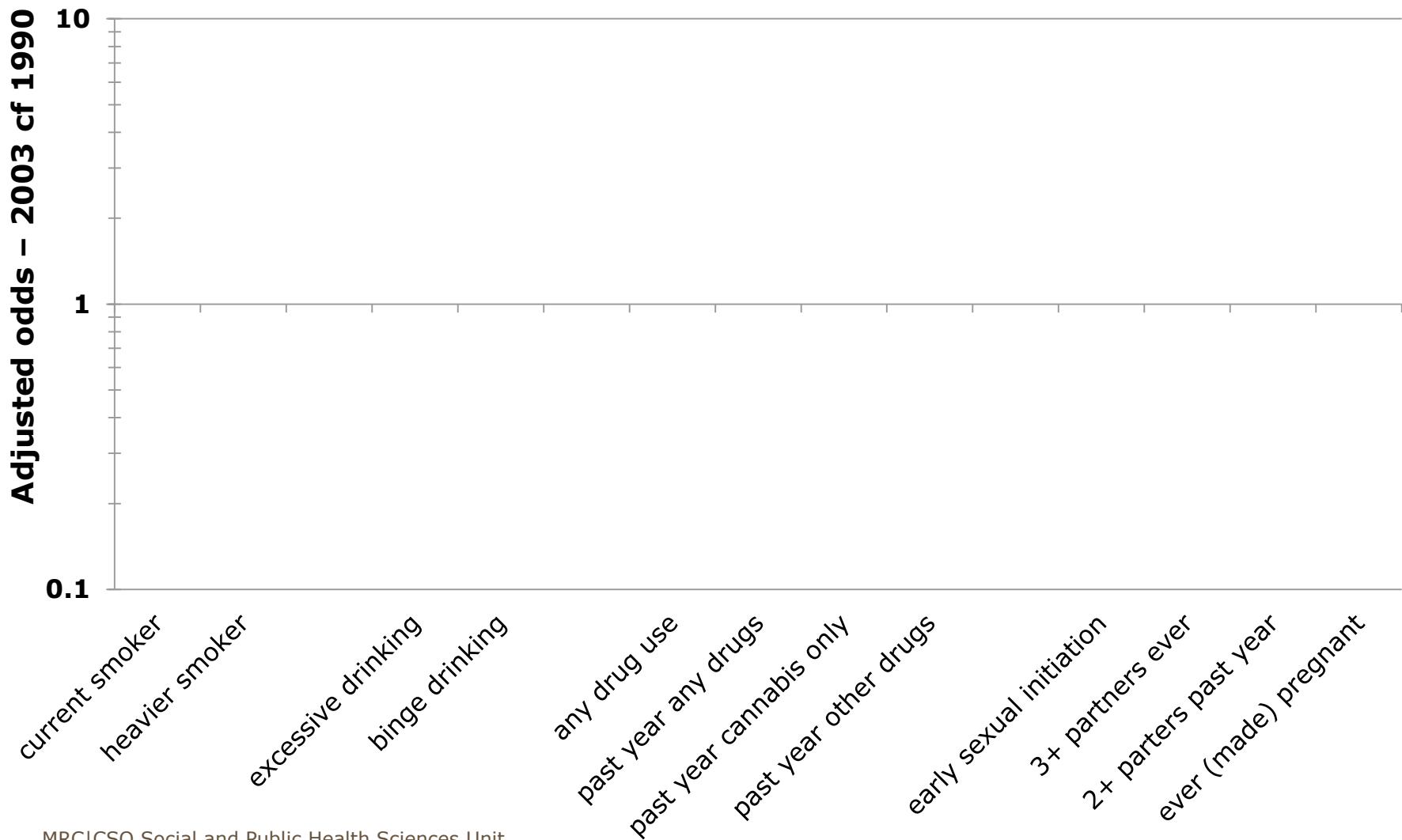
Later cohort = 19 years 3 months, SD ± 6 months

Age positively associated with:

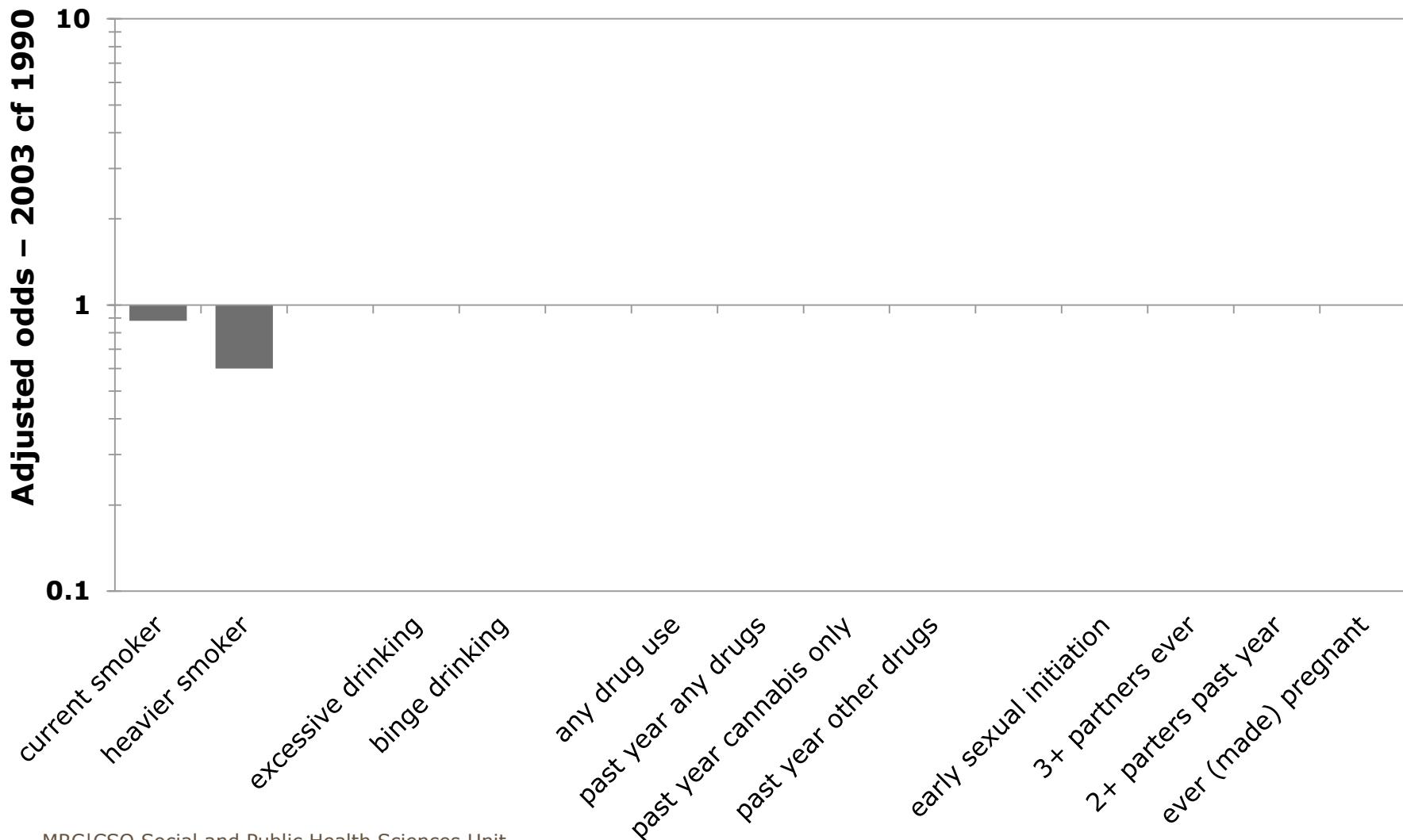
- Current smoker
- Experience of any drugs
- Any drug apart from cannabis last year
- Three or more sexual partners ever
- Two or more sexual partners last year
- Ever pregnant

So might some of the observed increase in rates just be because the later cohort were a bit older?

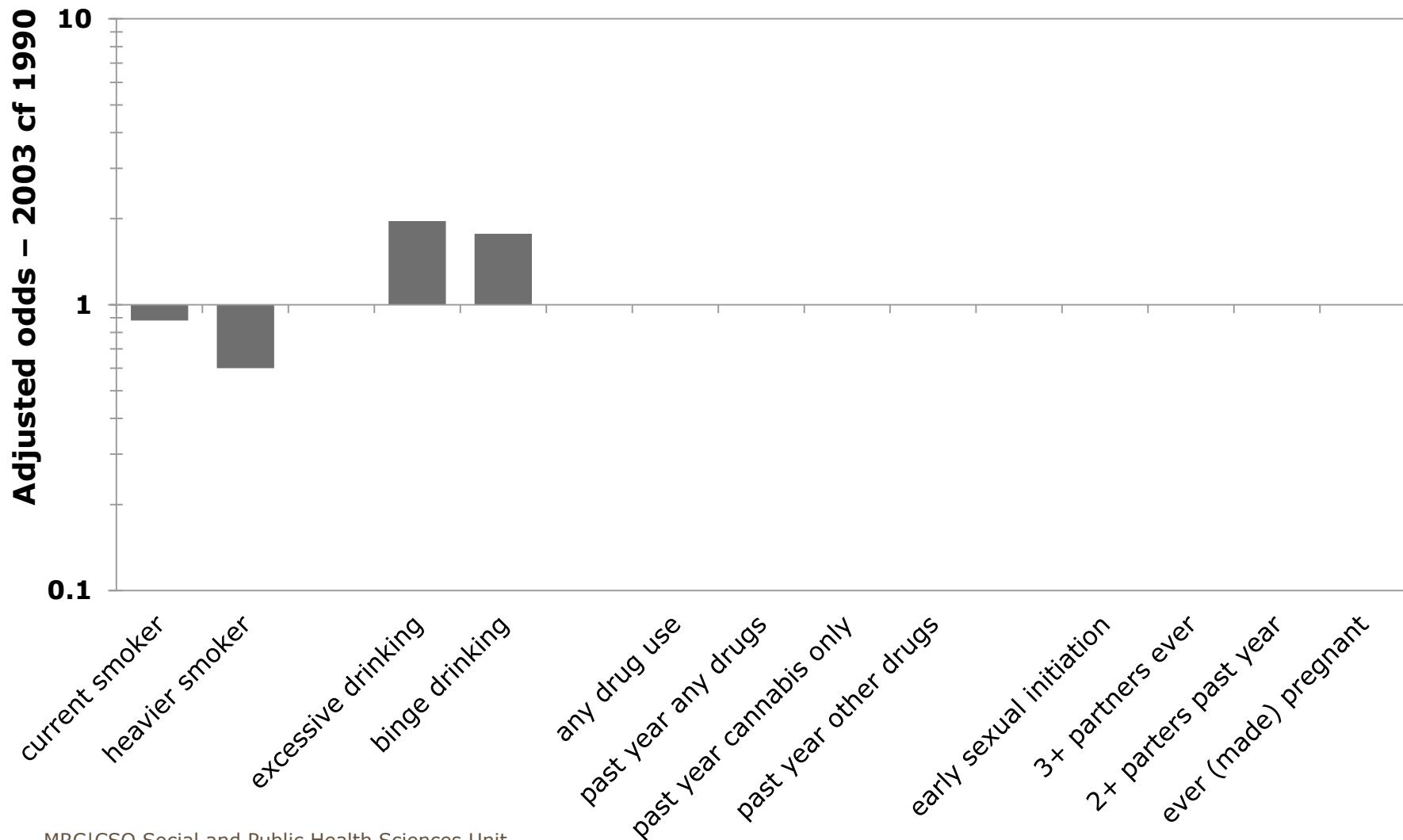
Age and class adjusted odds of health-risk behaviours – 2003 compared with 1990



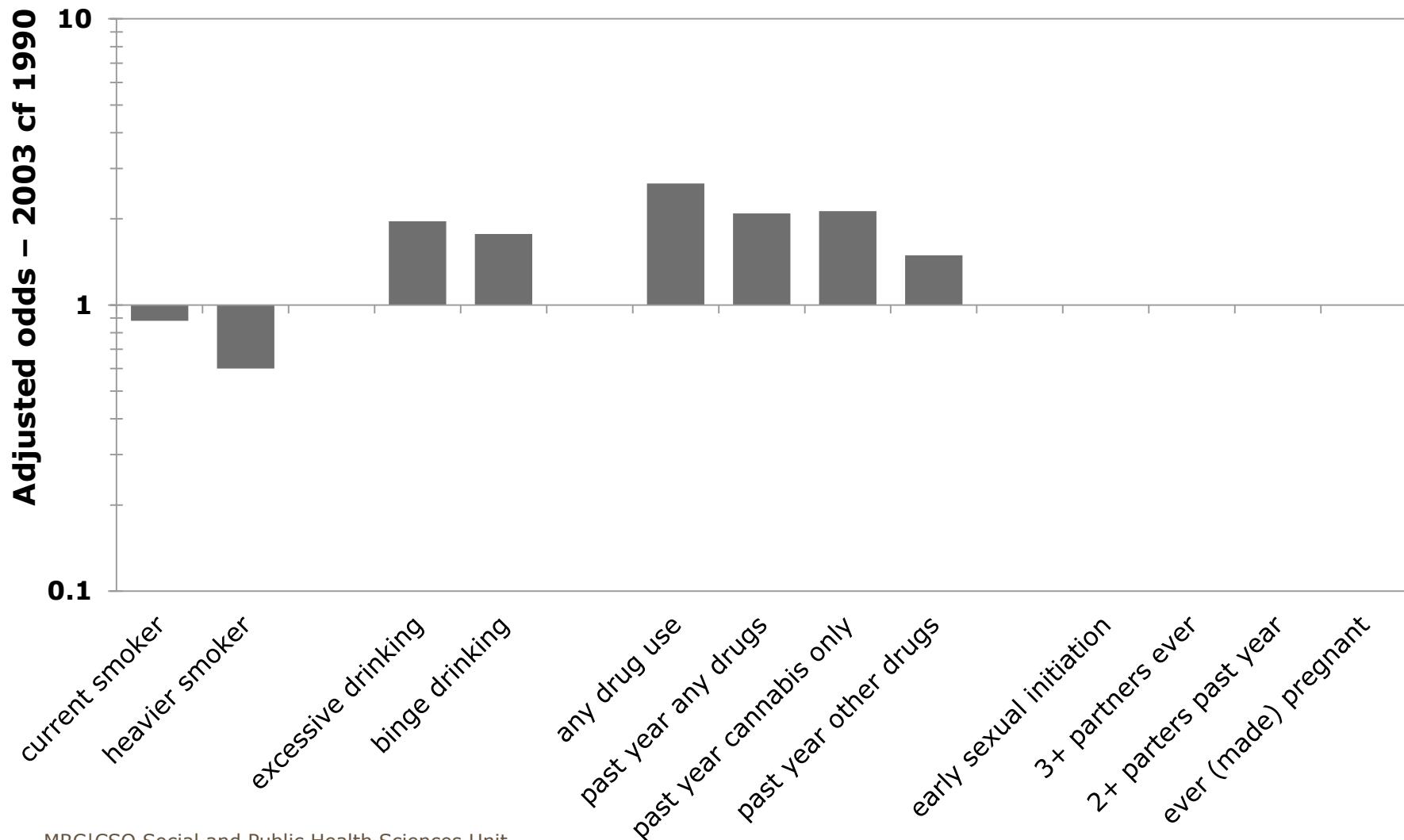
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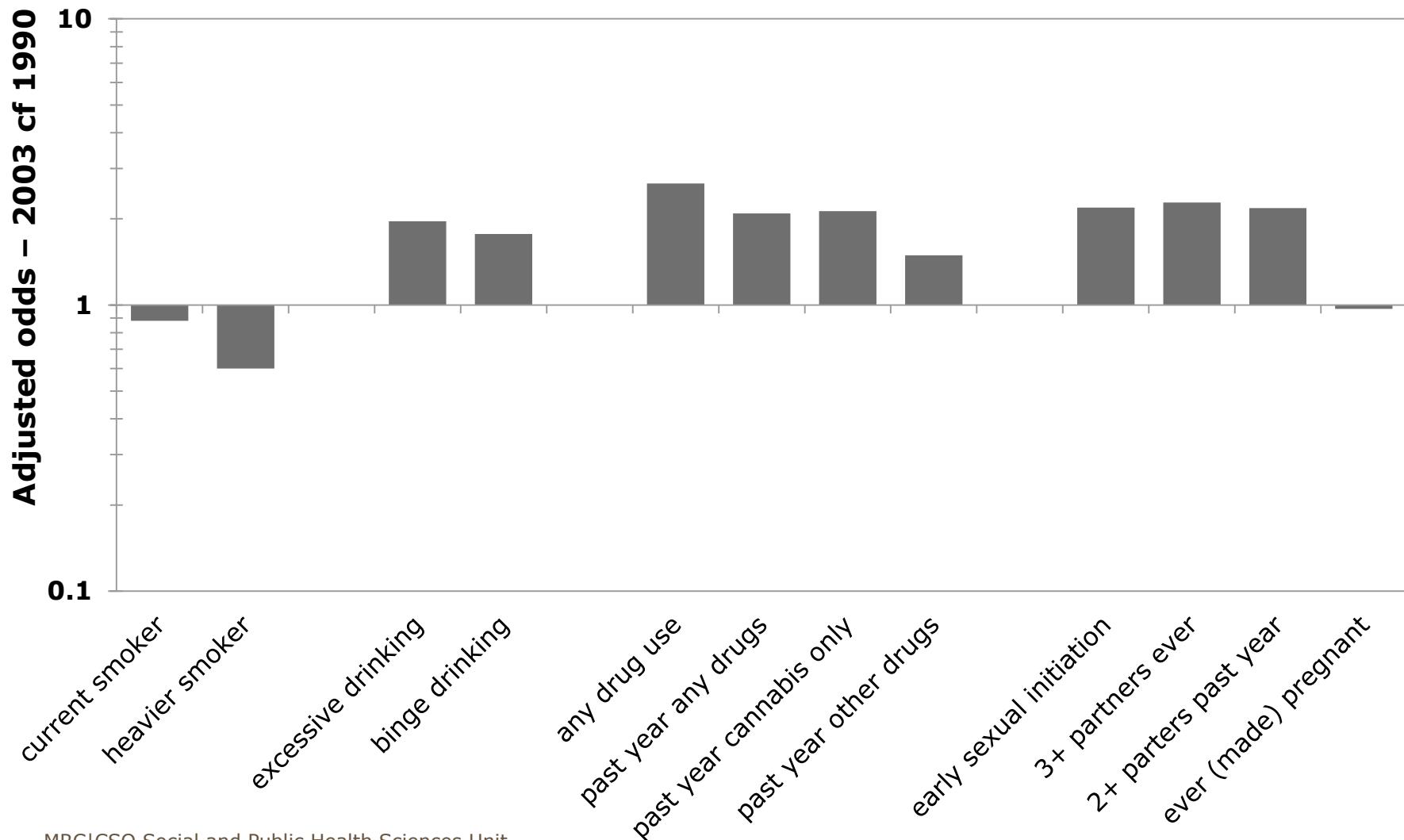
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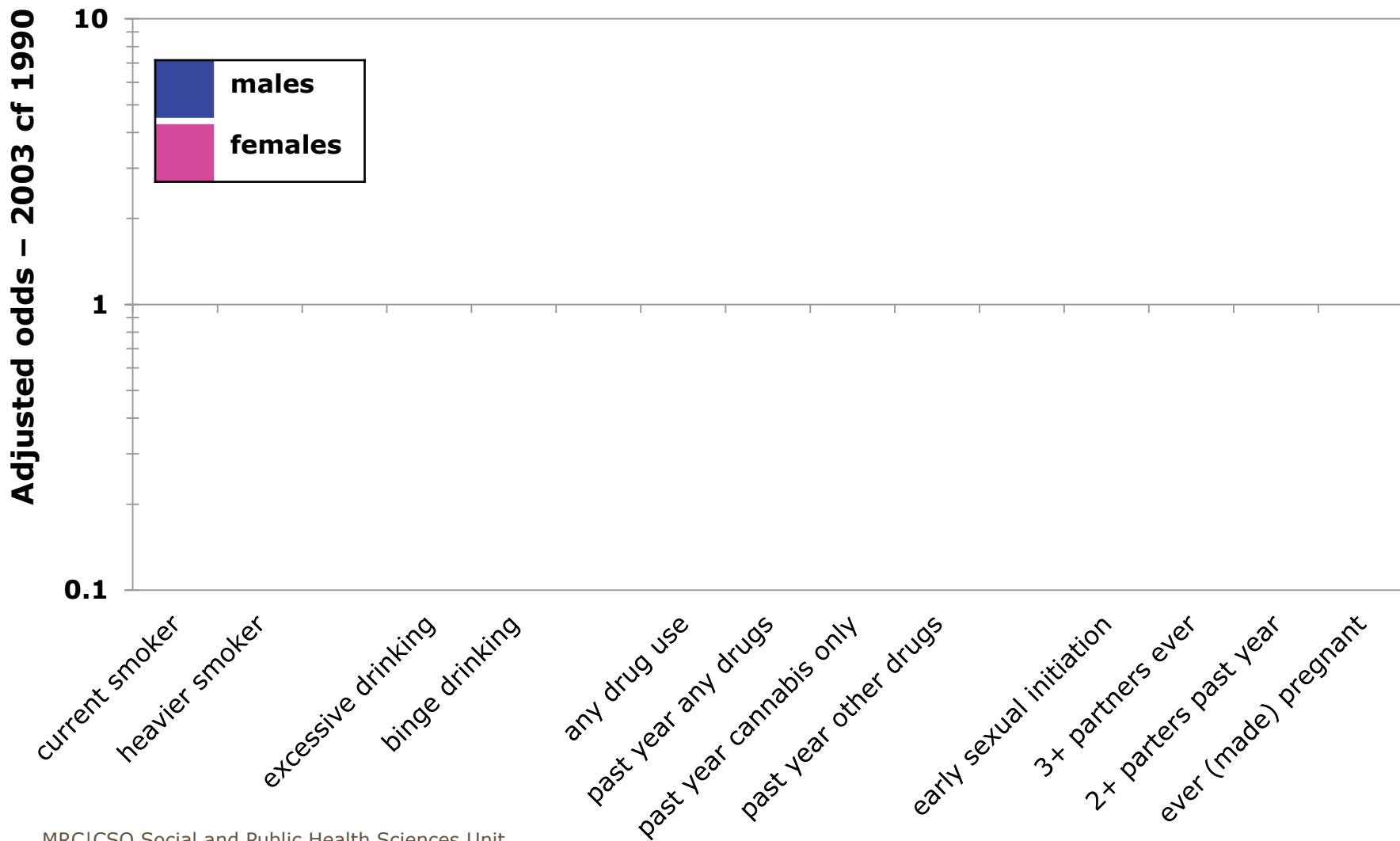
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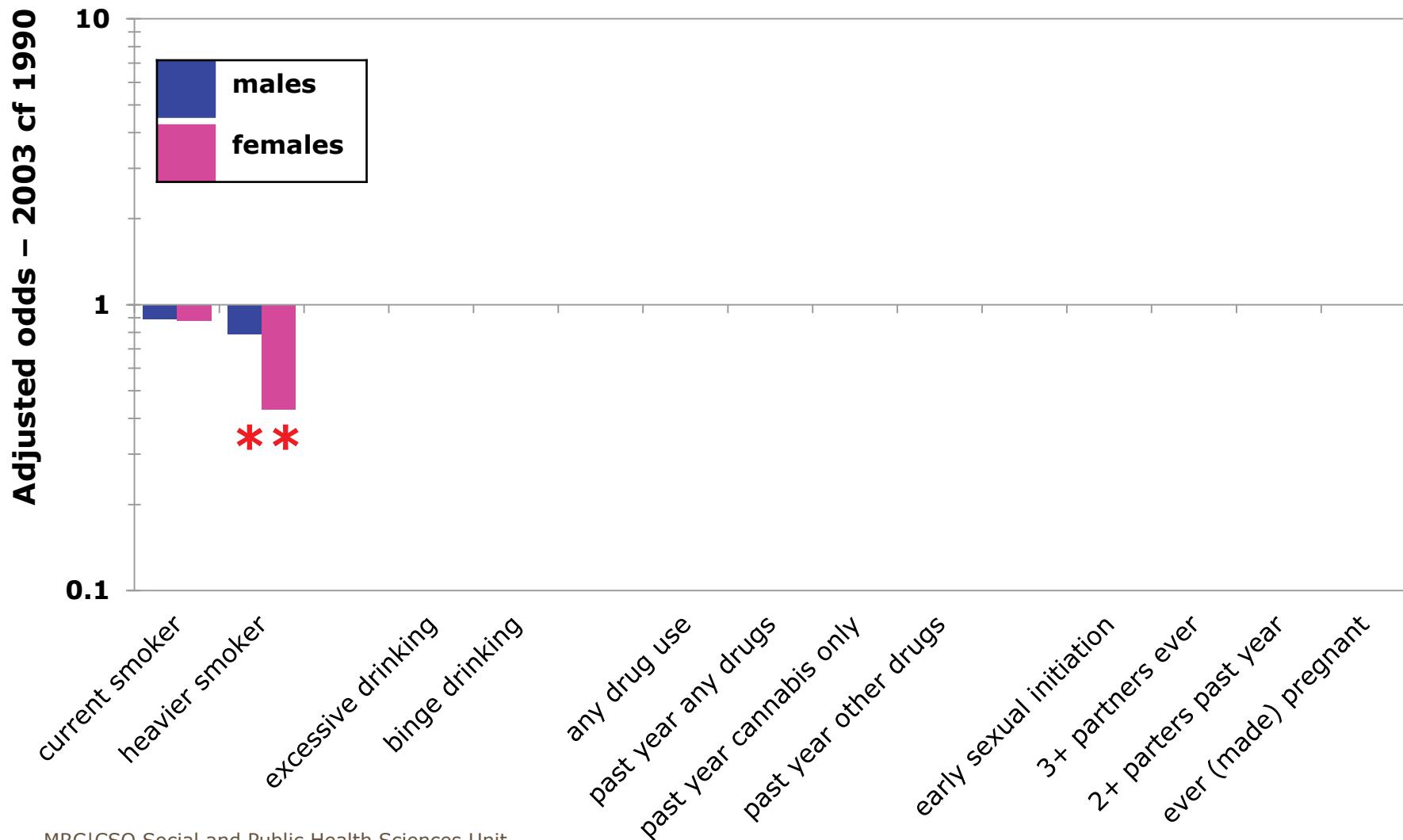
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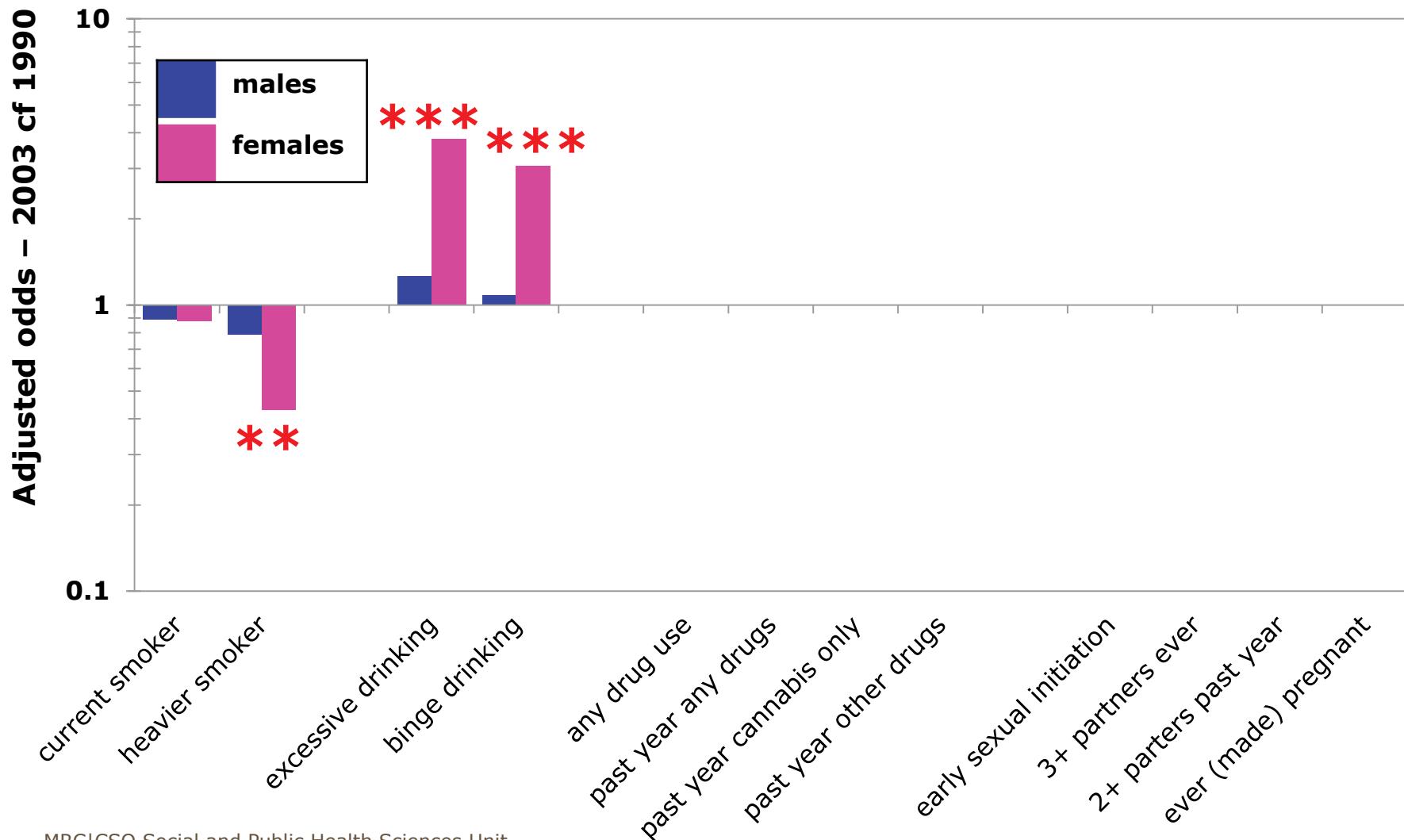
Age and class adjusted odds of health-risk behaviours – 2003 compared with 1990



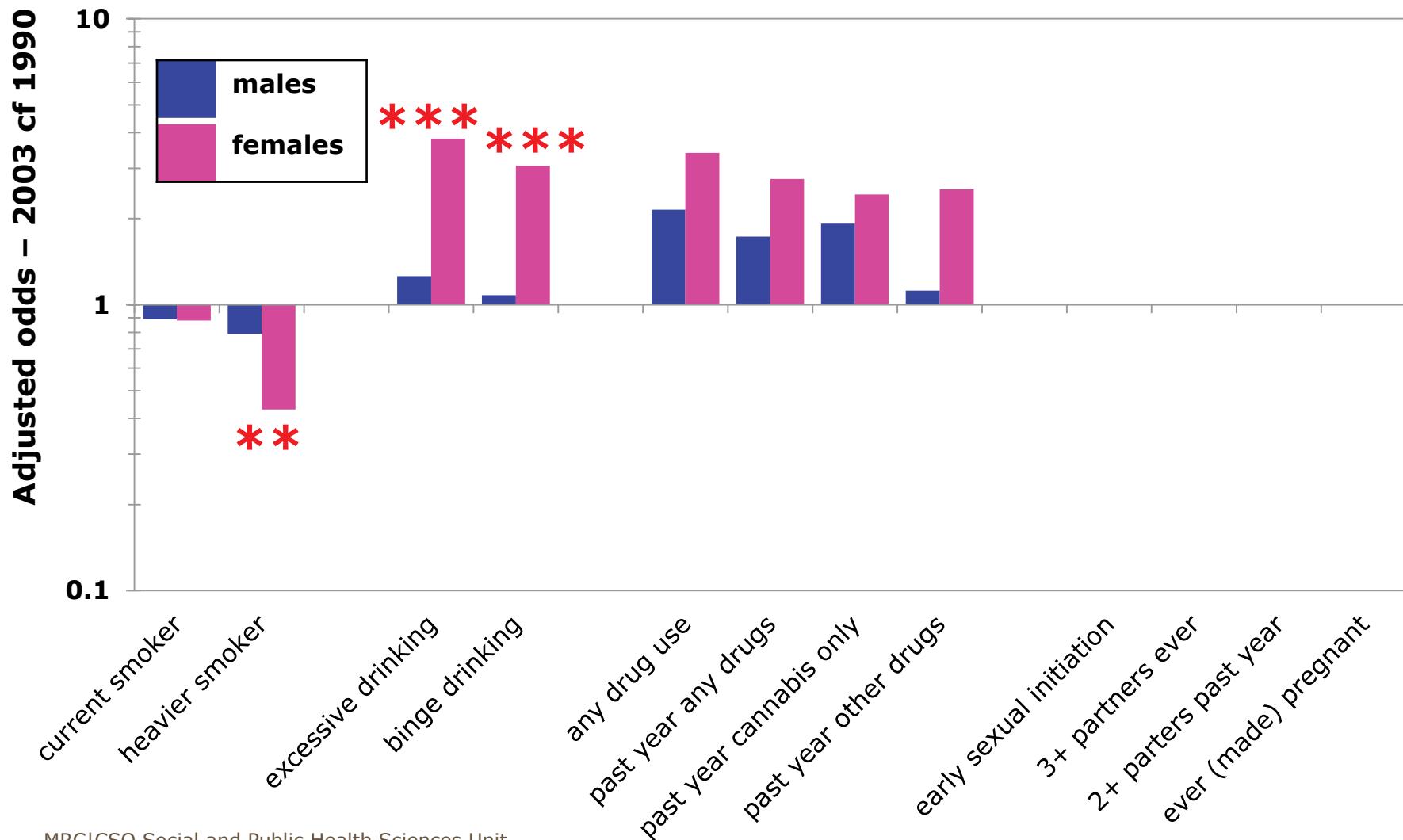
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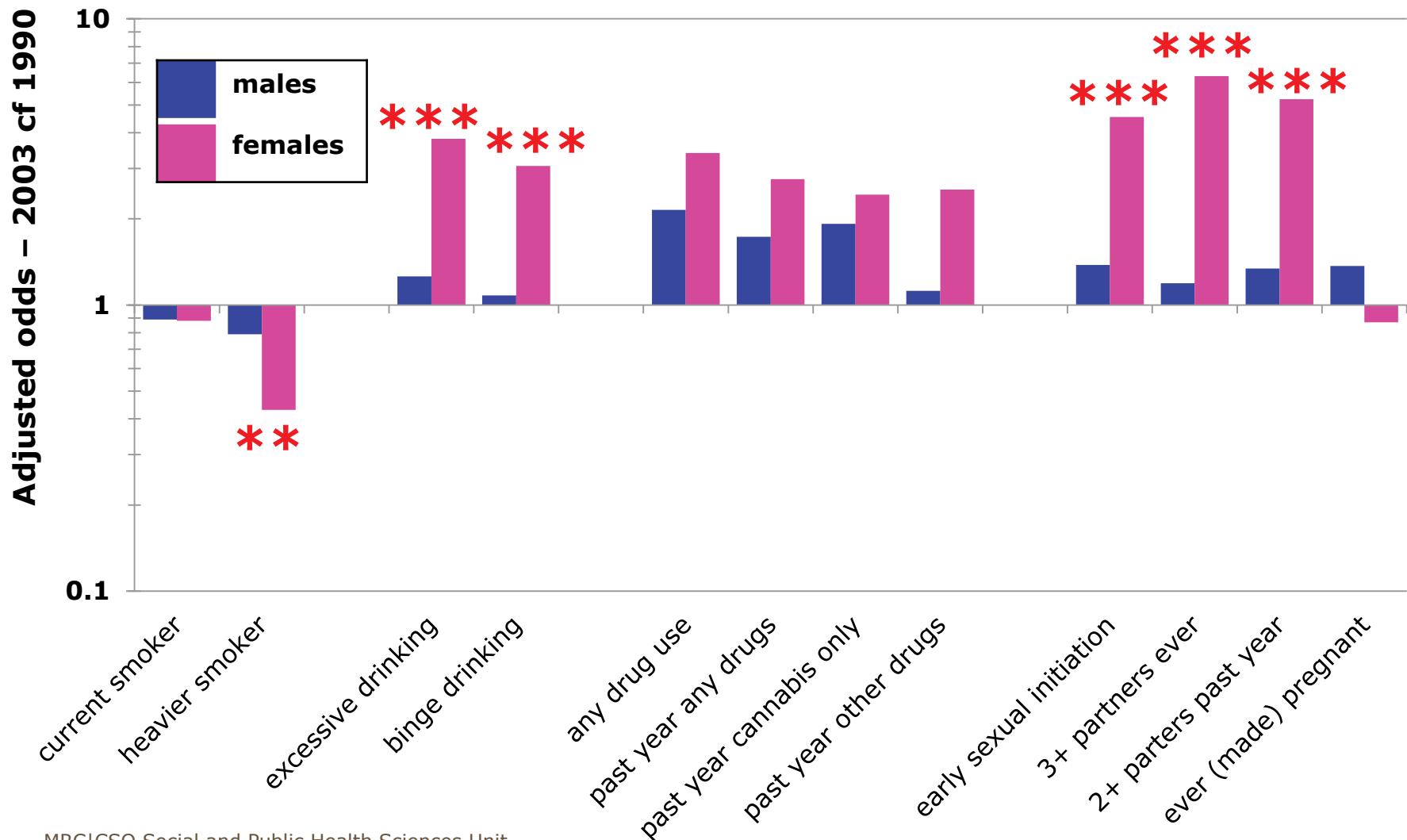
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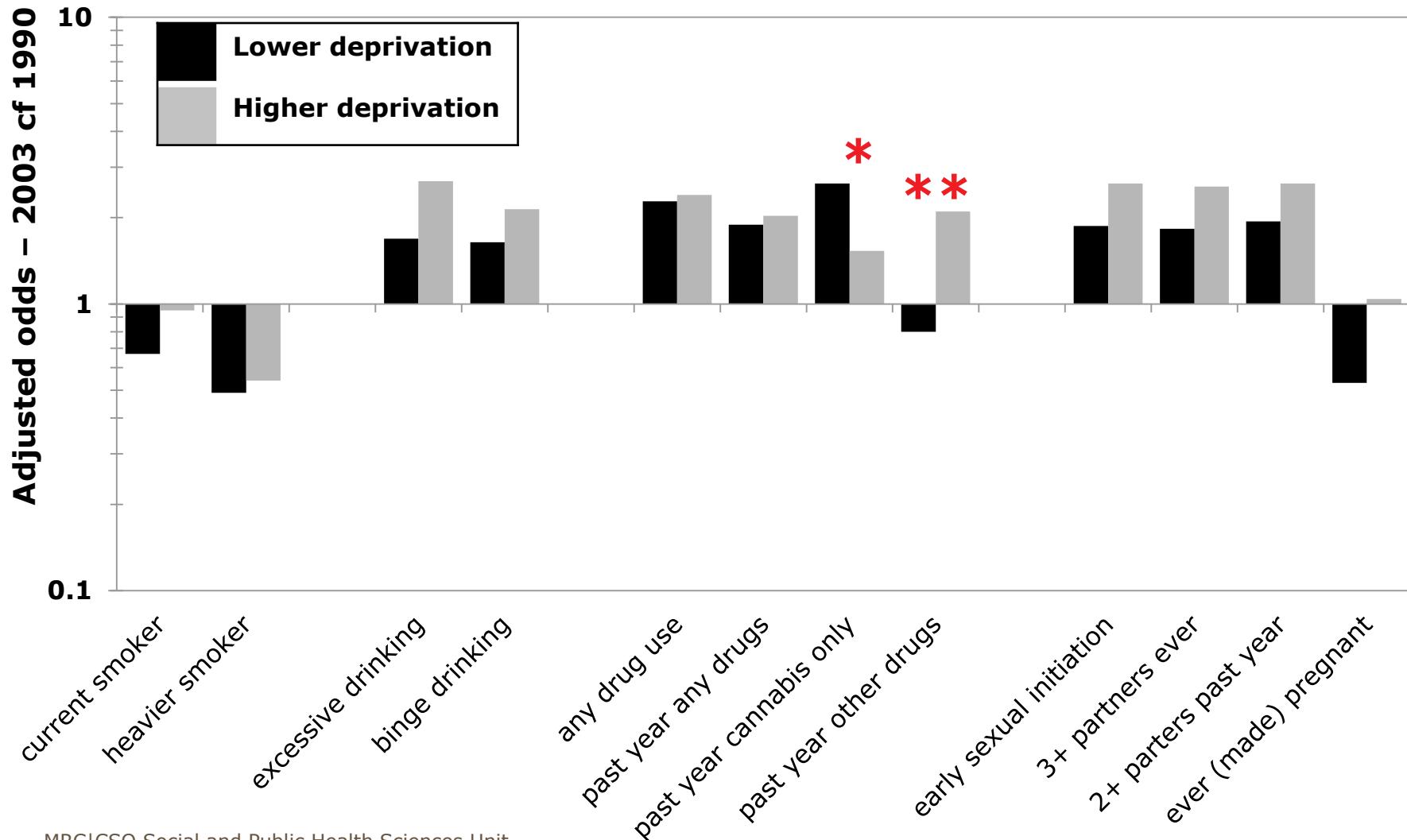
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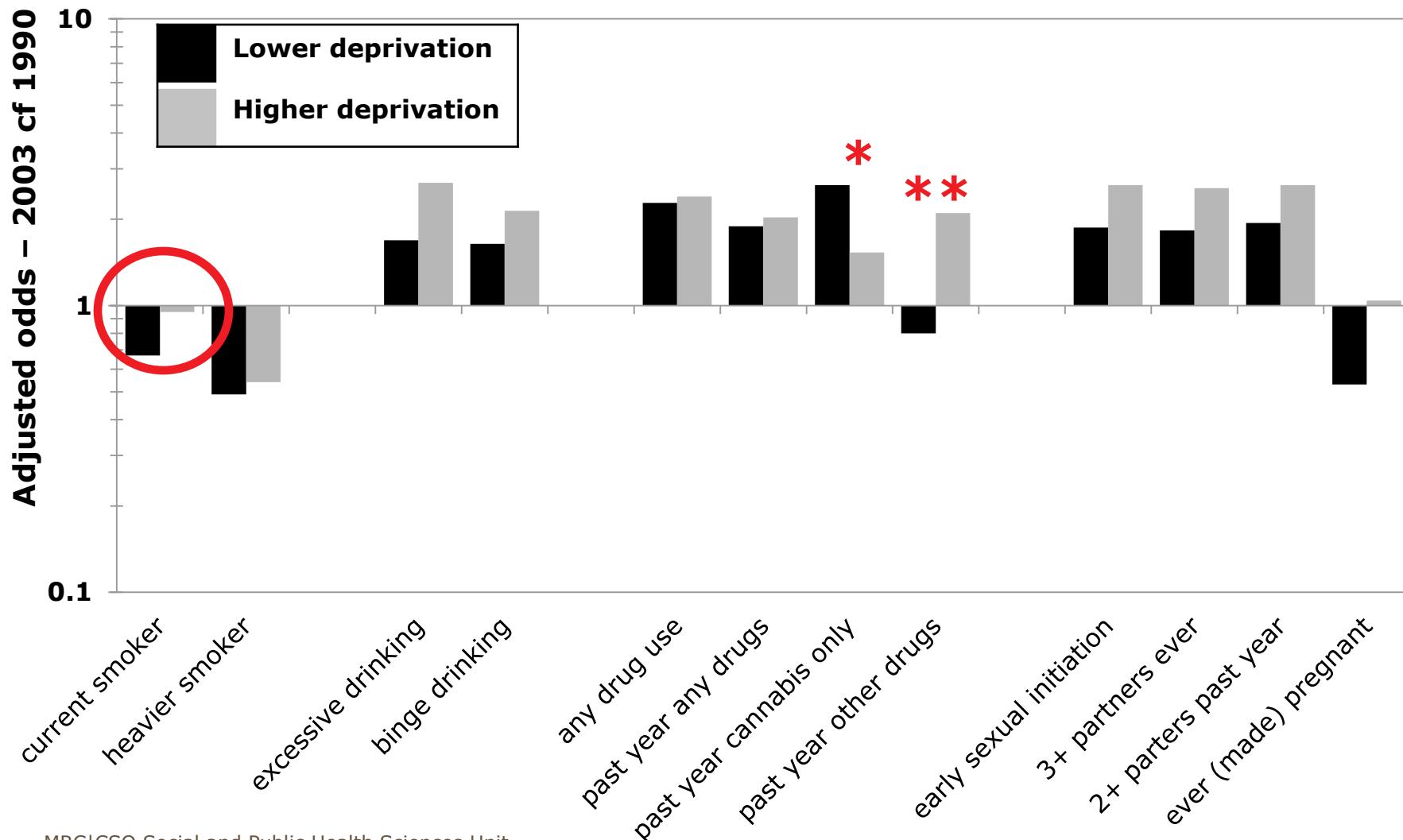
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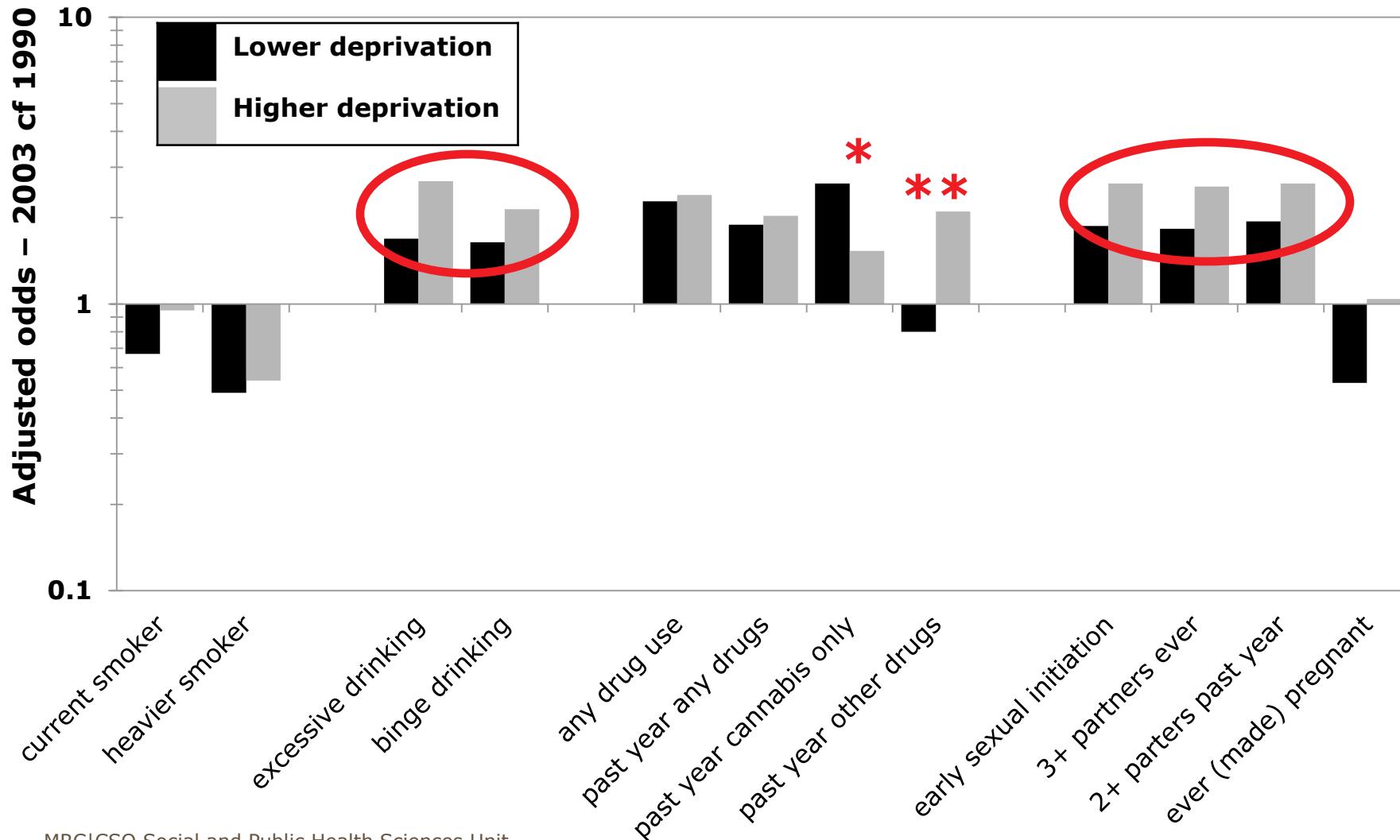
Age and gender adjusted odds of health-risk behaviours – 2003 compared with 1990



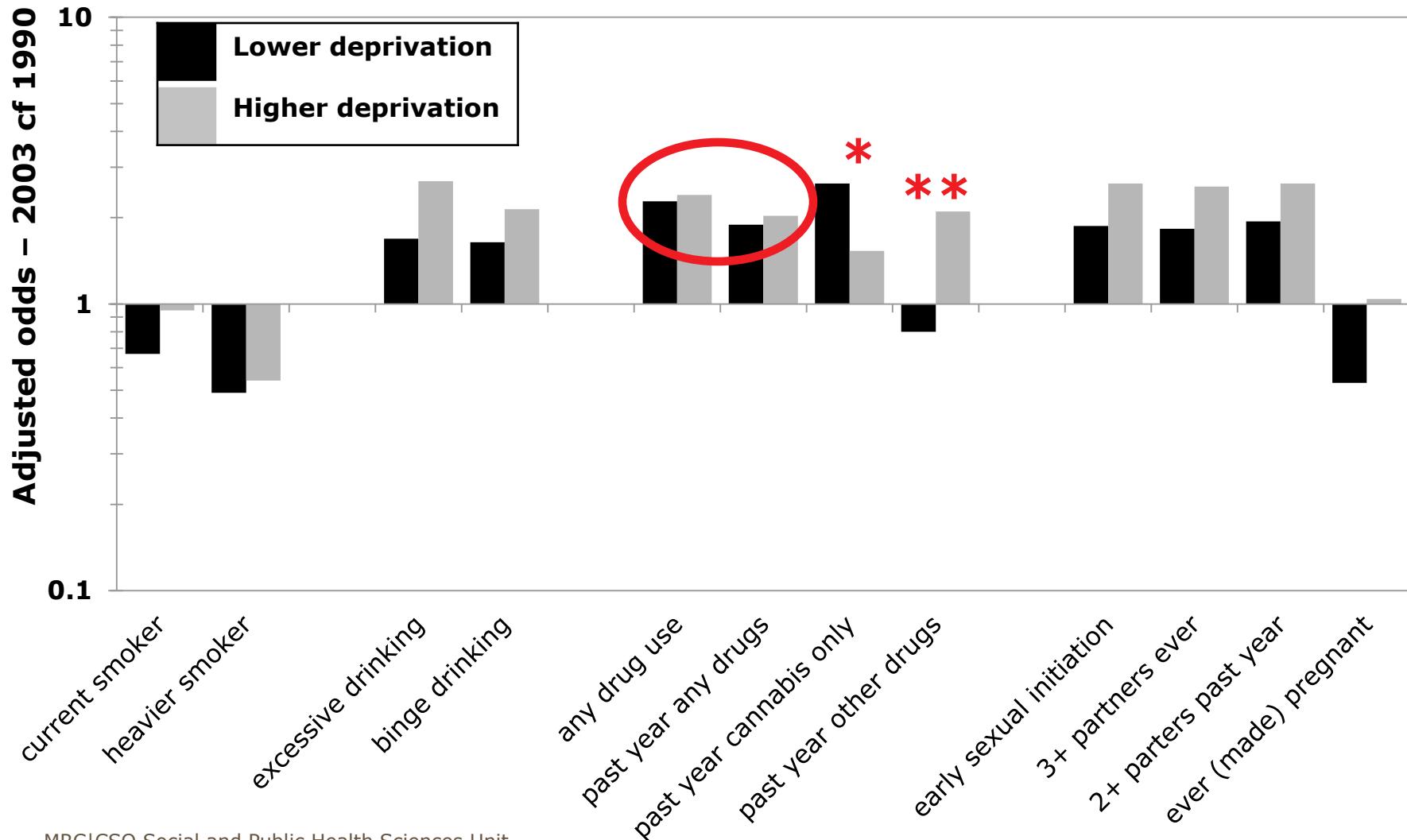
Age and gender adjusted odds of health-risk behaviours – 2003 compared with 1990



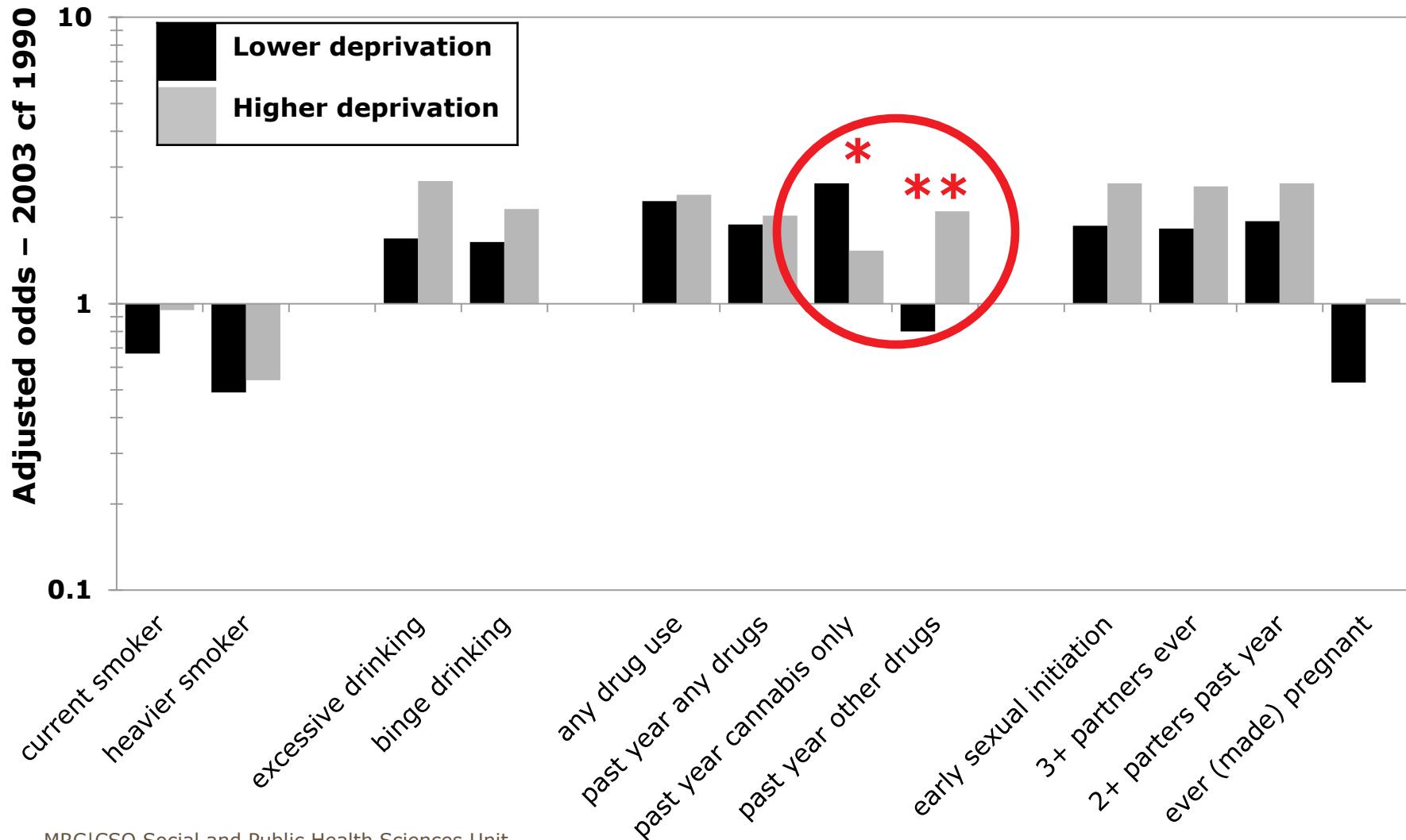
Age and gender adjusted odds of health-risk behaviours – 2003 compared with 1990



Age and gender adjusted odds of health-risk behaviours – 2003 compared with 1990



Age and gender adjusted odds of health-risk behaviours – 2003 compared with 1990



Part 1 - Trends in adolescent risk behaviours: comparison of two West of Scotland cohorts

Summary

- In analyses of adolescent risk behaviours, age matters.
- Rates of drinking, illicit drug use, early sexual initiation and experience of greater numbers of sexual partners all increased significantly between 1990 and 2003.
- Increases generally greater among females, especially in drinking and sexual risk behaviours.
- Most rates increased to a similar extent regardless of SES – but ...
- Current smoking decreased only among those from higher SES groups, and ...
- Increases in ‘cannabis-only’ were greater among higher SES groups while use of drugs other than cannabis increased more in lower SES groups.

Part 2: Relationships between risk behaviours: comparison of two West of Scotland cohorts

- Some health-risk behaviours tend to cluster in adolescence.
- A major focus has been on associations between substance use and sexual behaviour.
- This might:
 - result from direct effects of certain substances on sexual decisions; and/or
 - reflect a predisposition towards risky behaviours in some individuals.

And if clustering reflects a predisposition towards risky behaviours in some people ...

- ... then might clustering change when risky behaviour rates change?
- Studies have examined differences in clustering by:
 - Gender – mostly weaker associations among males – maybe because sexual experience in adolescence more normative for males so less tied to other problem behaviours.
 - Country - weaker associations in US than Europe – maybe because of lower substance use rates in their US sample, international differences in the acceptability of adolescent substance use or sexual behaviour.
 - Culture - no associations among ‘urban, impoverished’ African-American adolescents – maybe these behaviours have different cultural meanings among certain groups.
- No study of time-trends in relationships between health-risk behaviours.

Question(s) for our study

- Are associations between substance use and sexual risk behaviour more (or less) evident when those risky behaviours are more prevalent ('normative')?

And also, do they vary according to:

- Age – comparison of younger (mid teens) and older adolescents (age 18-19);
- Gender;
- SES – not addressed in previous studies.

Measures

	Younger adolescence	Older adolescence
Smoking	Started smoking 13 years or less	Current smoking
Drinking	Monthly drinker at 15	Excessive drinking (over 22 / 15 units in the past week)
Drug use	Any drug use	Any drug use
Sexual risk behaviour	Early sexual initiation (15 years or less)	Multiple sexual partners (3+)

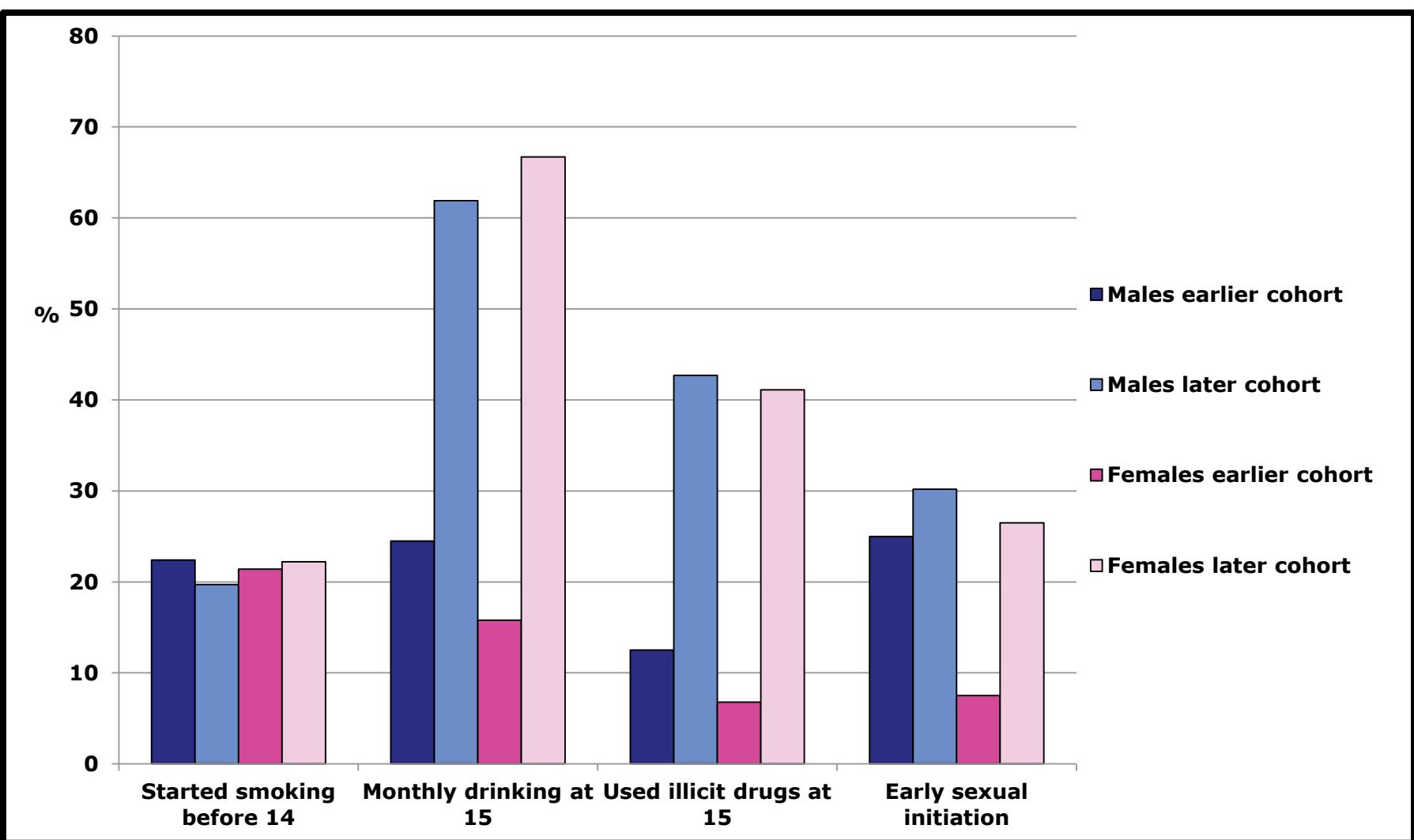
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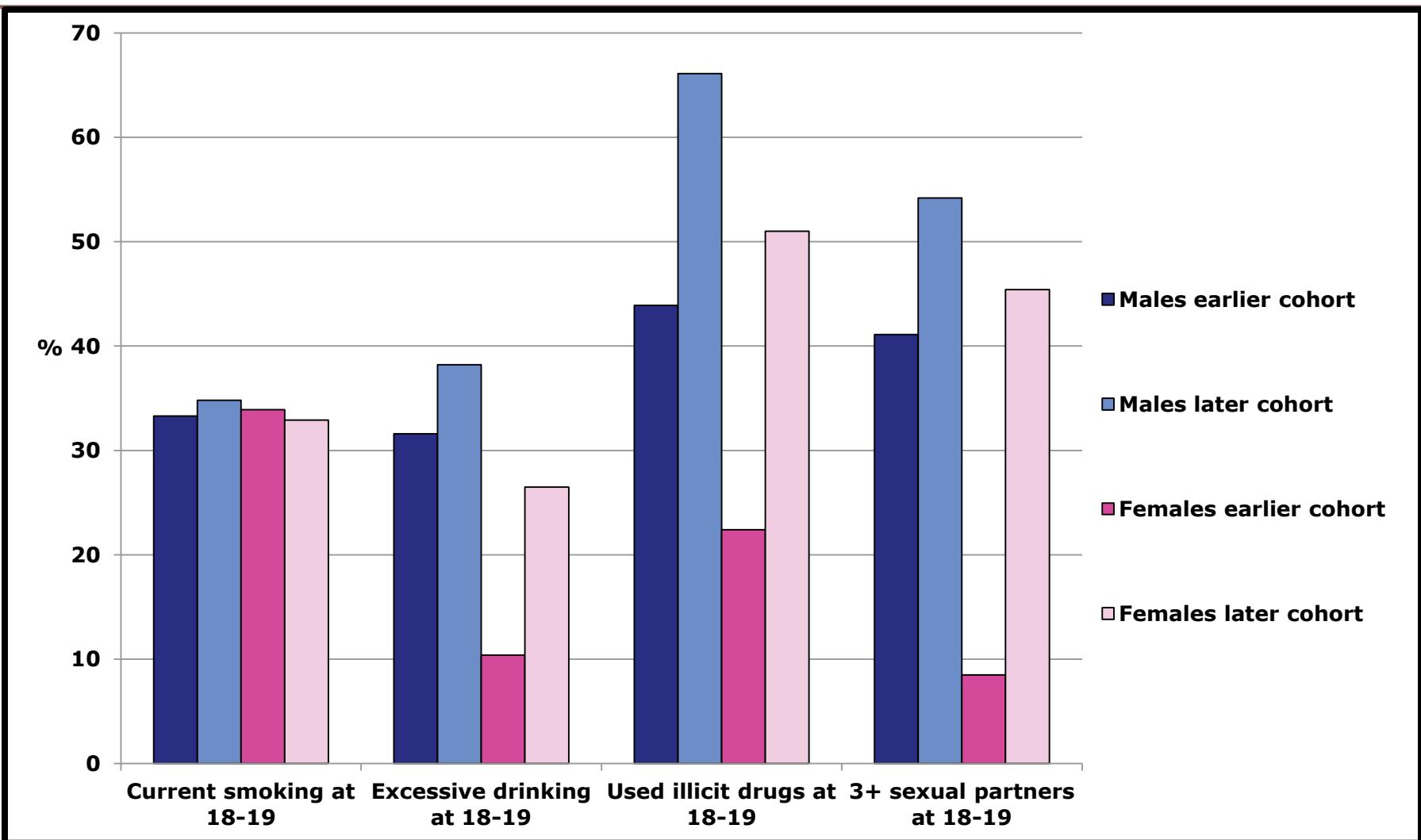
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Rates of younger adolescent behaviours among males and females in the two cohorts

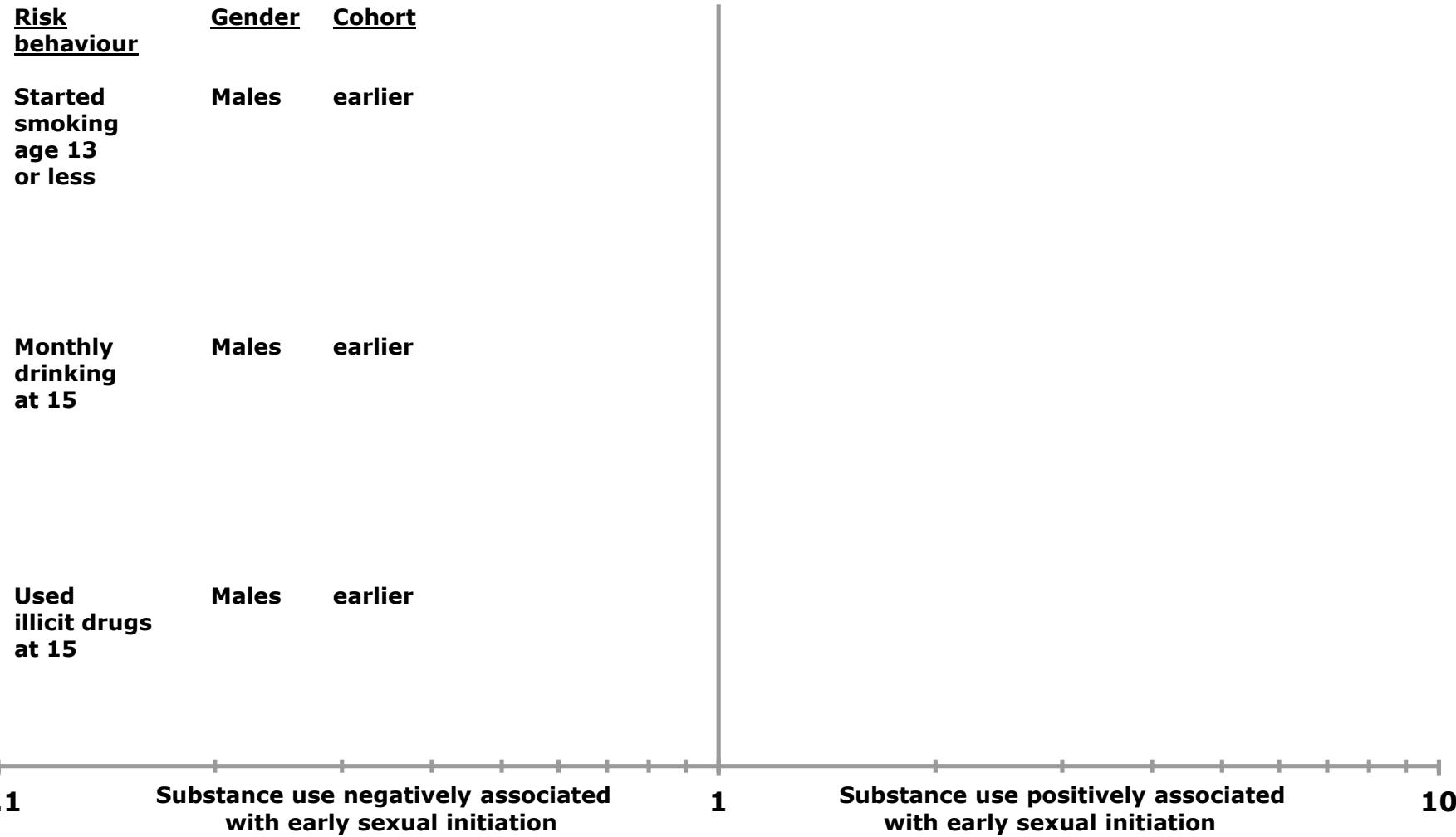


Rates of older adolescent behaviours among males and females in the two cohorts

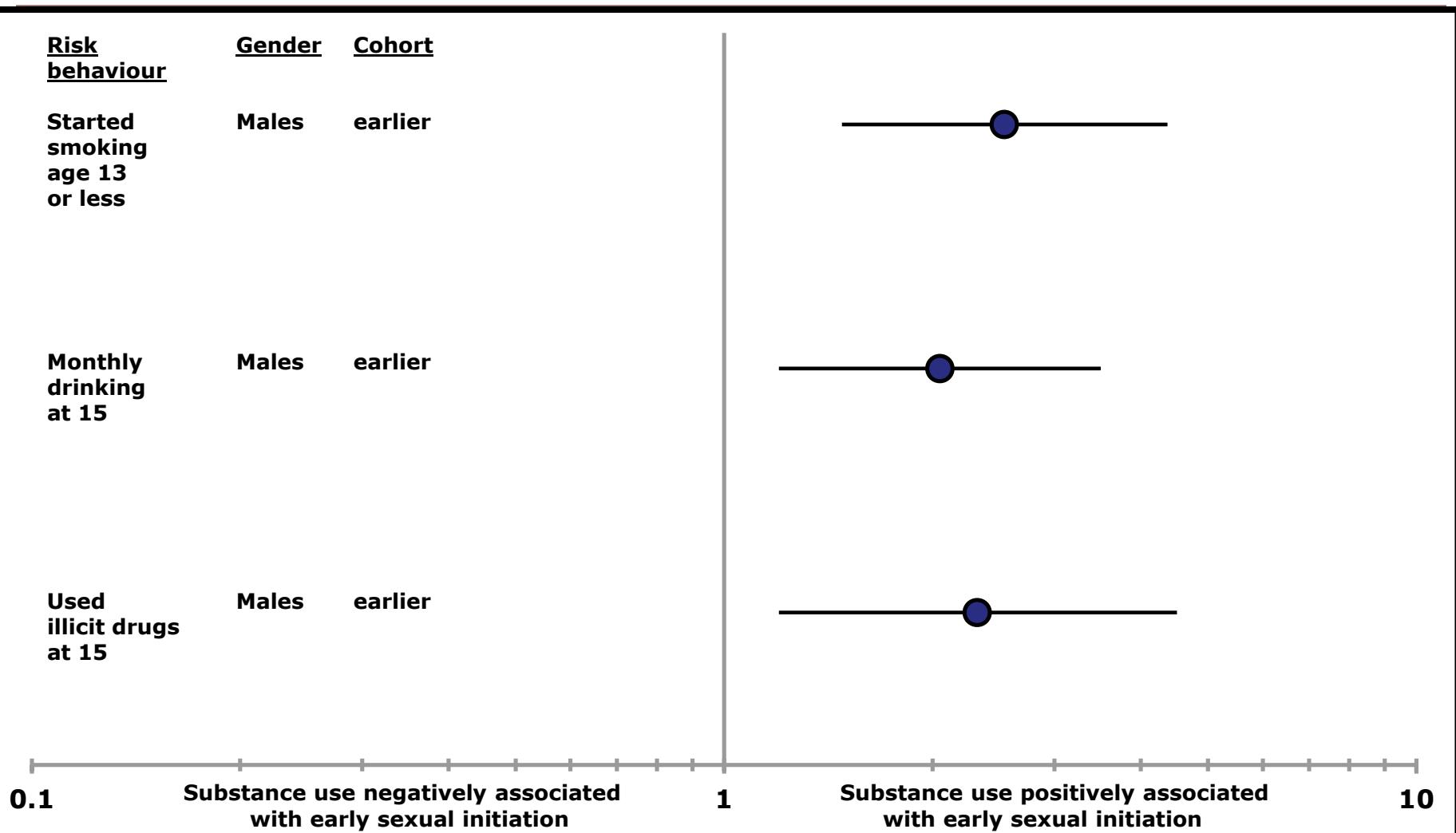


Mutually adjusted associations between younger adolescent substance use and early sexual initiation among males and females in the two cohorts

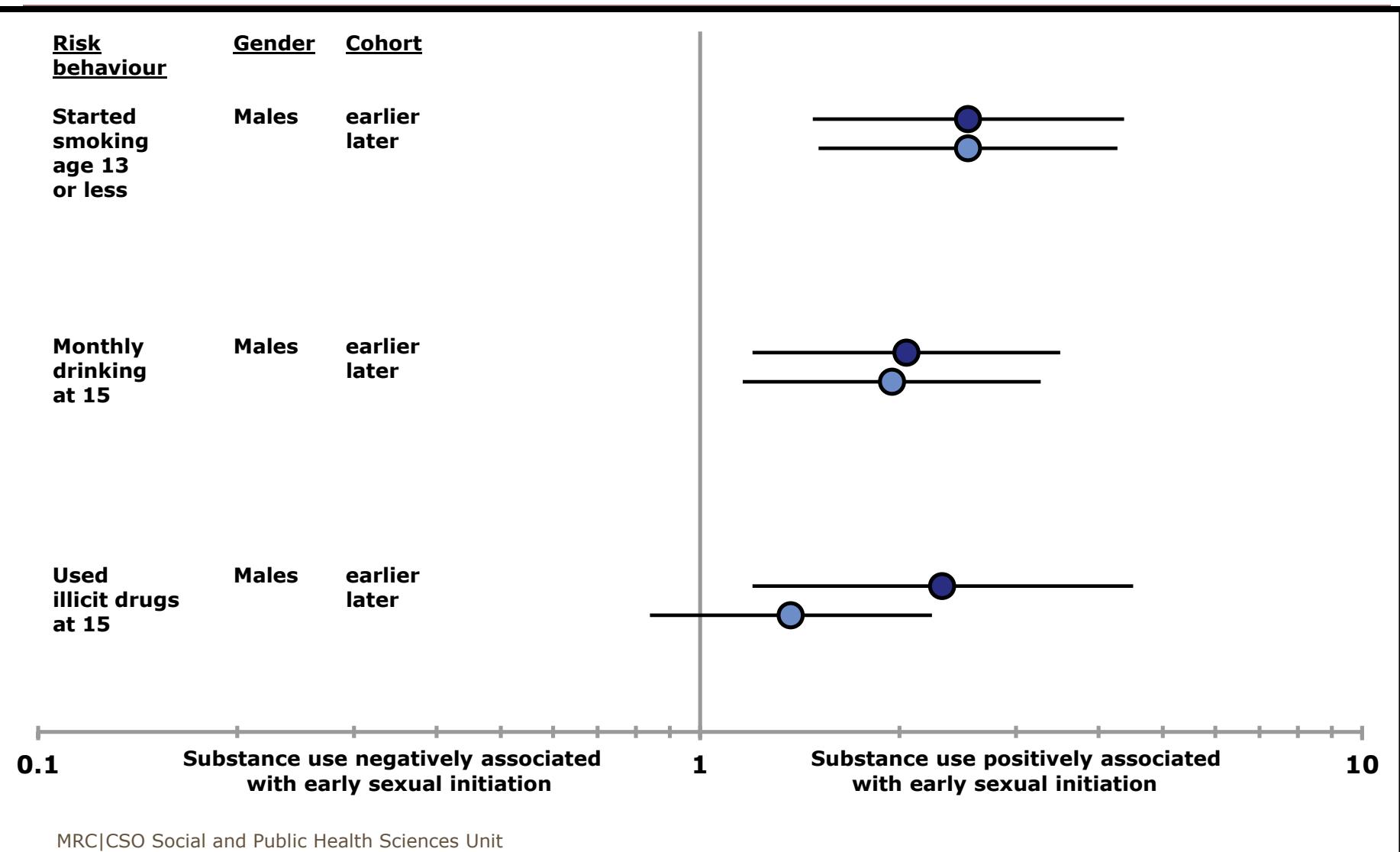
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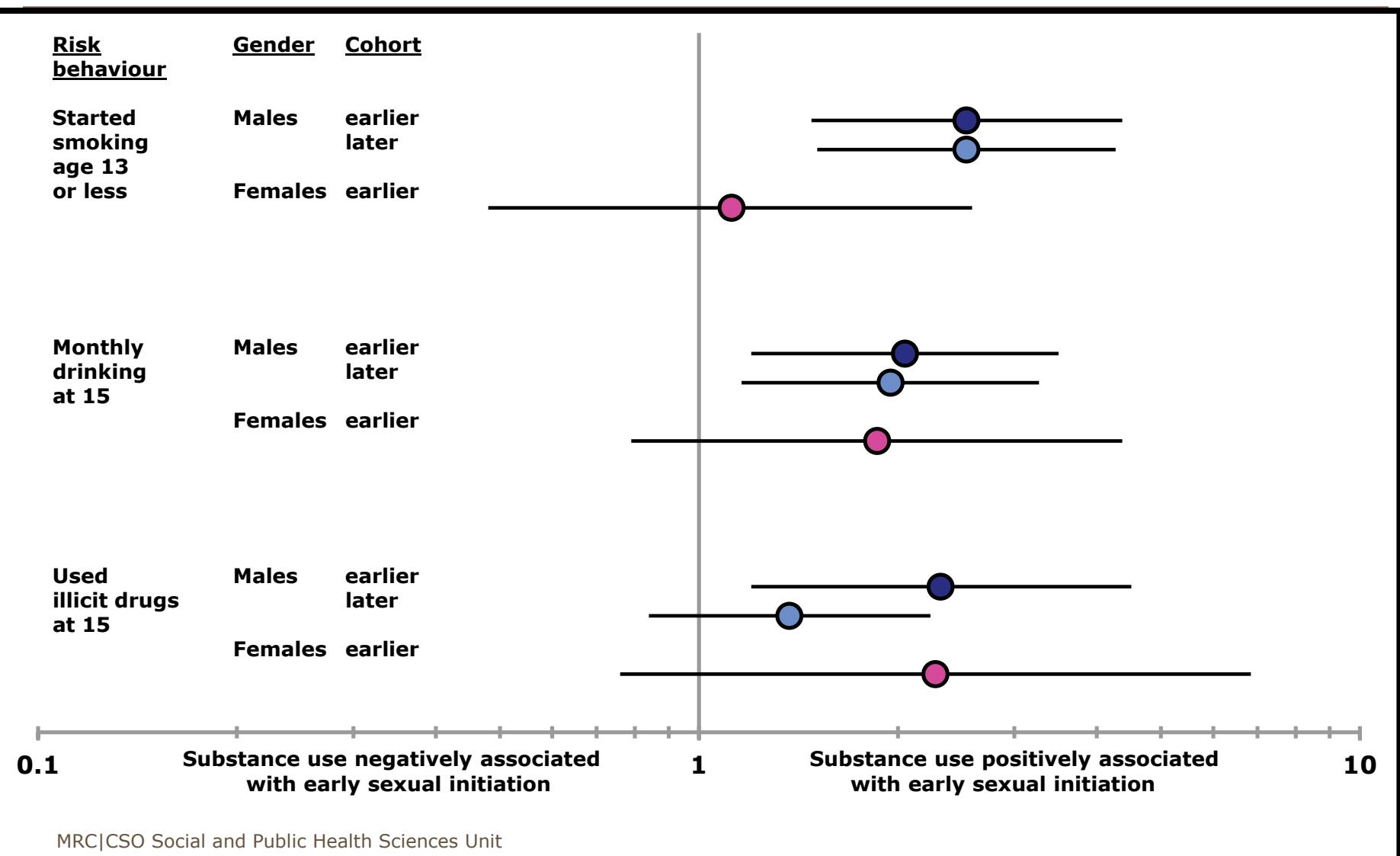
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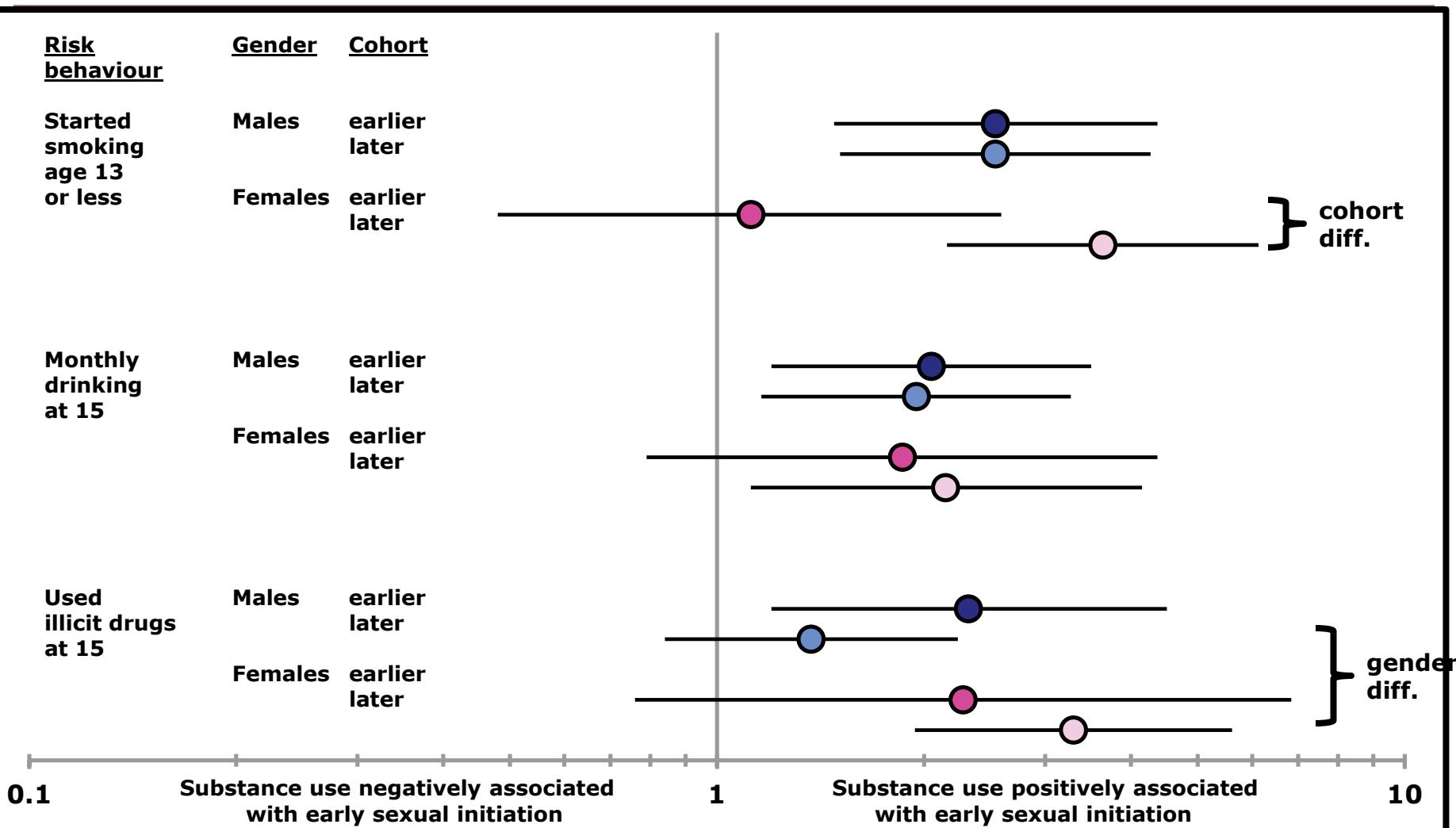
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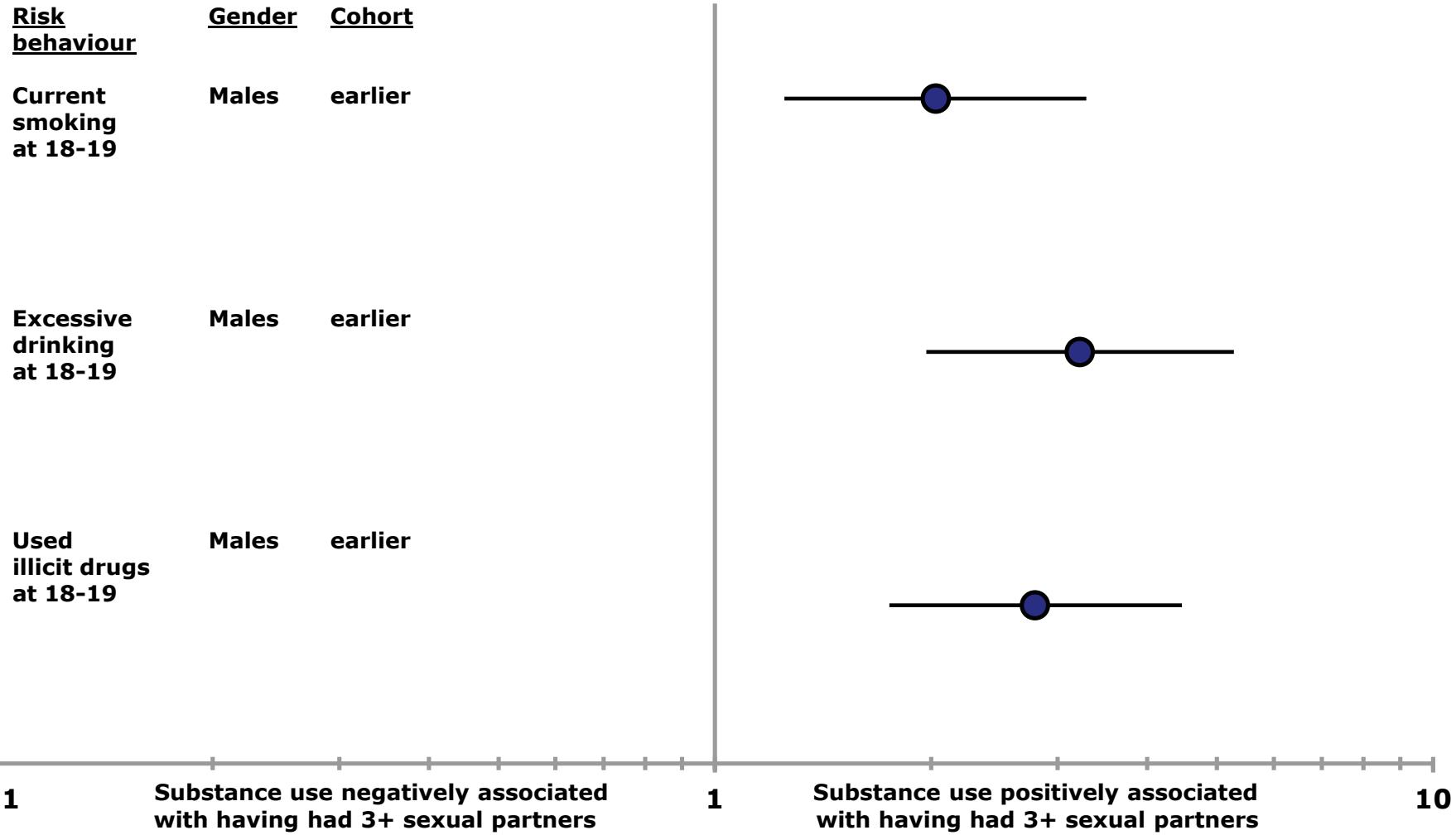
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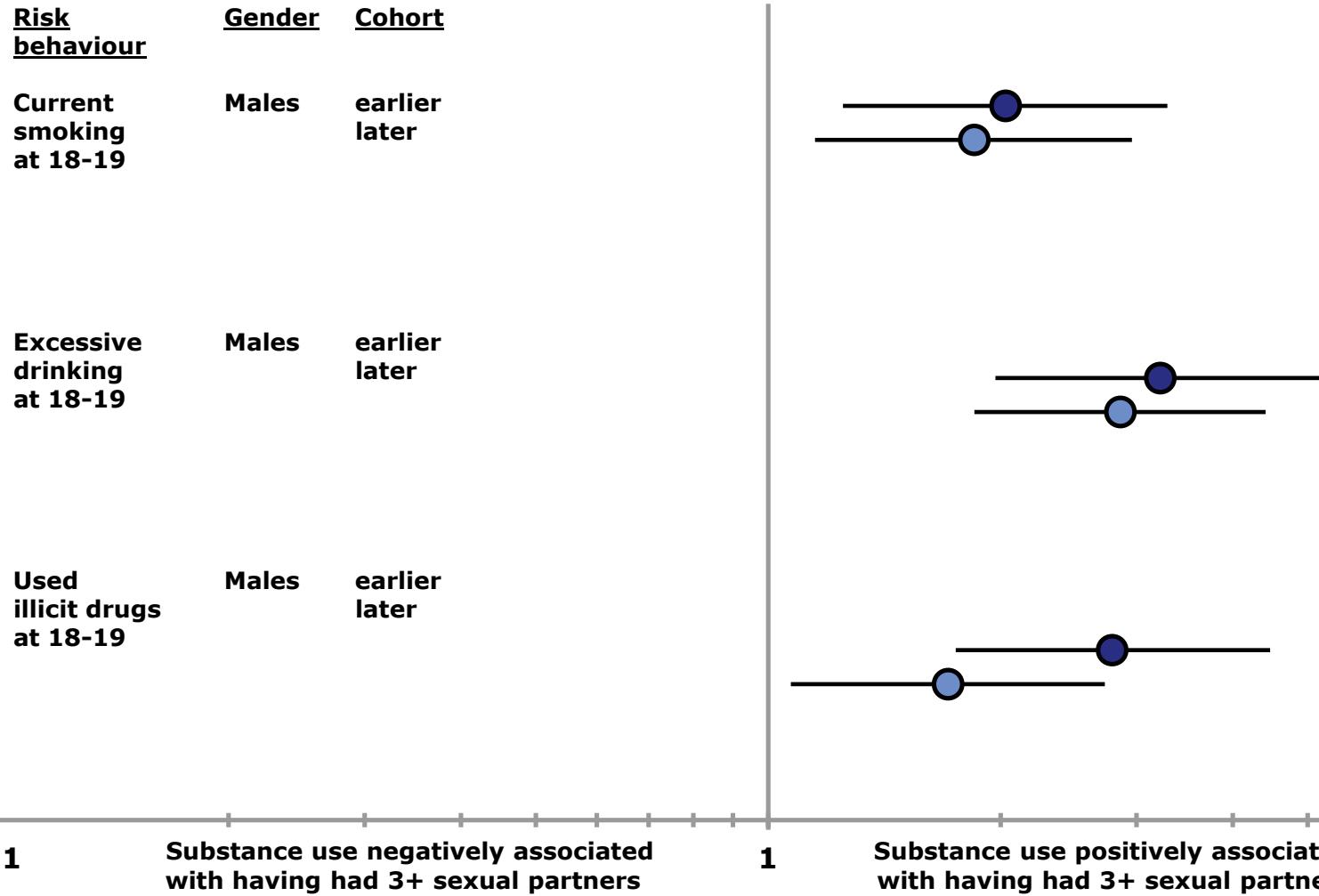
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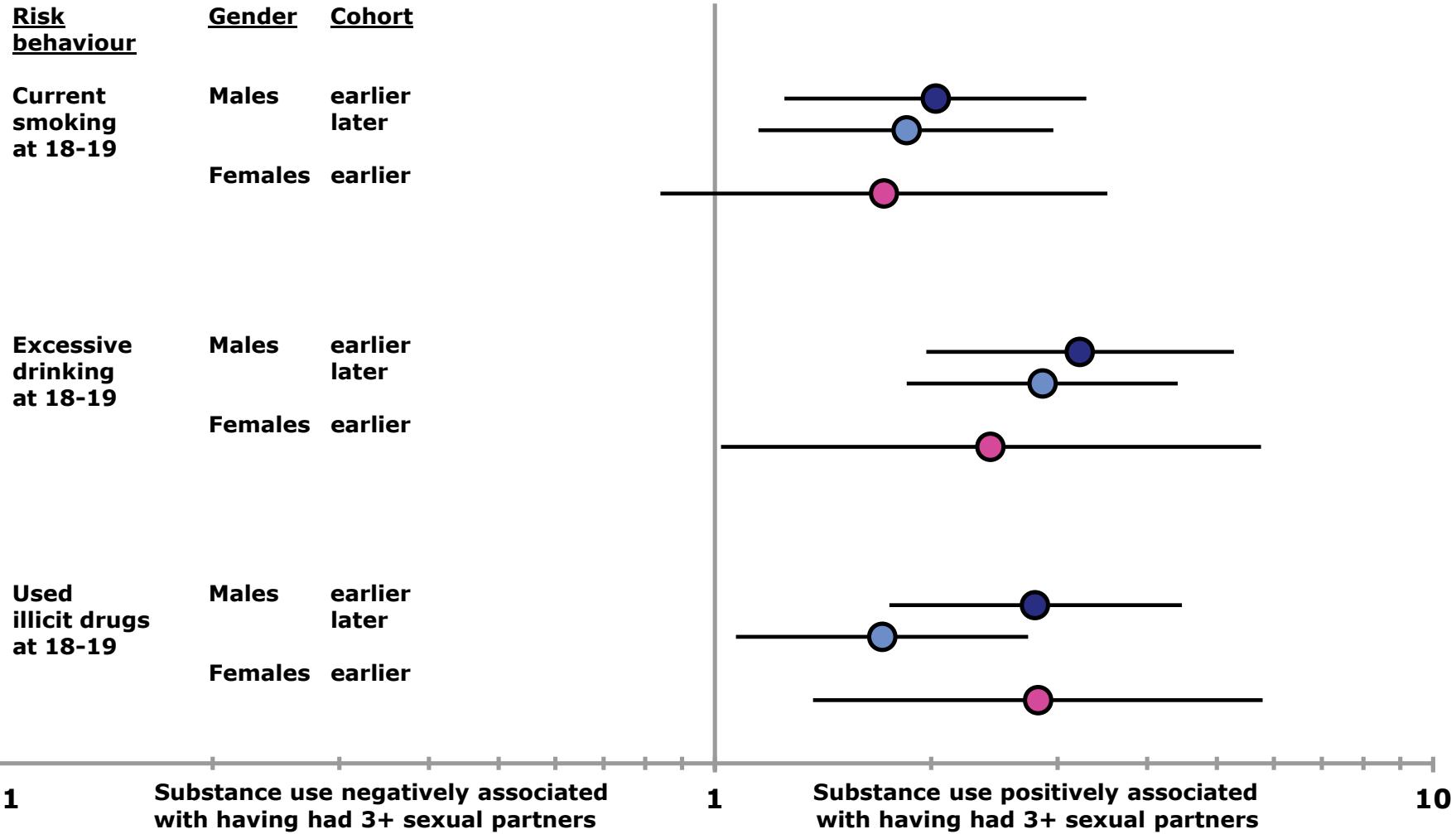
Mutually adjusted associations between older adolescent substance use and multiple sexual partners among males and females in the two cohorts



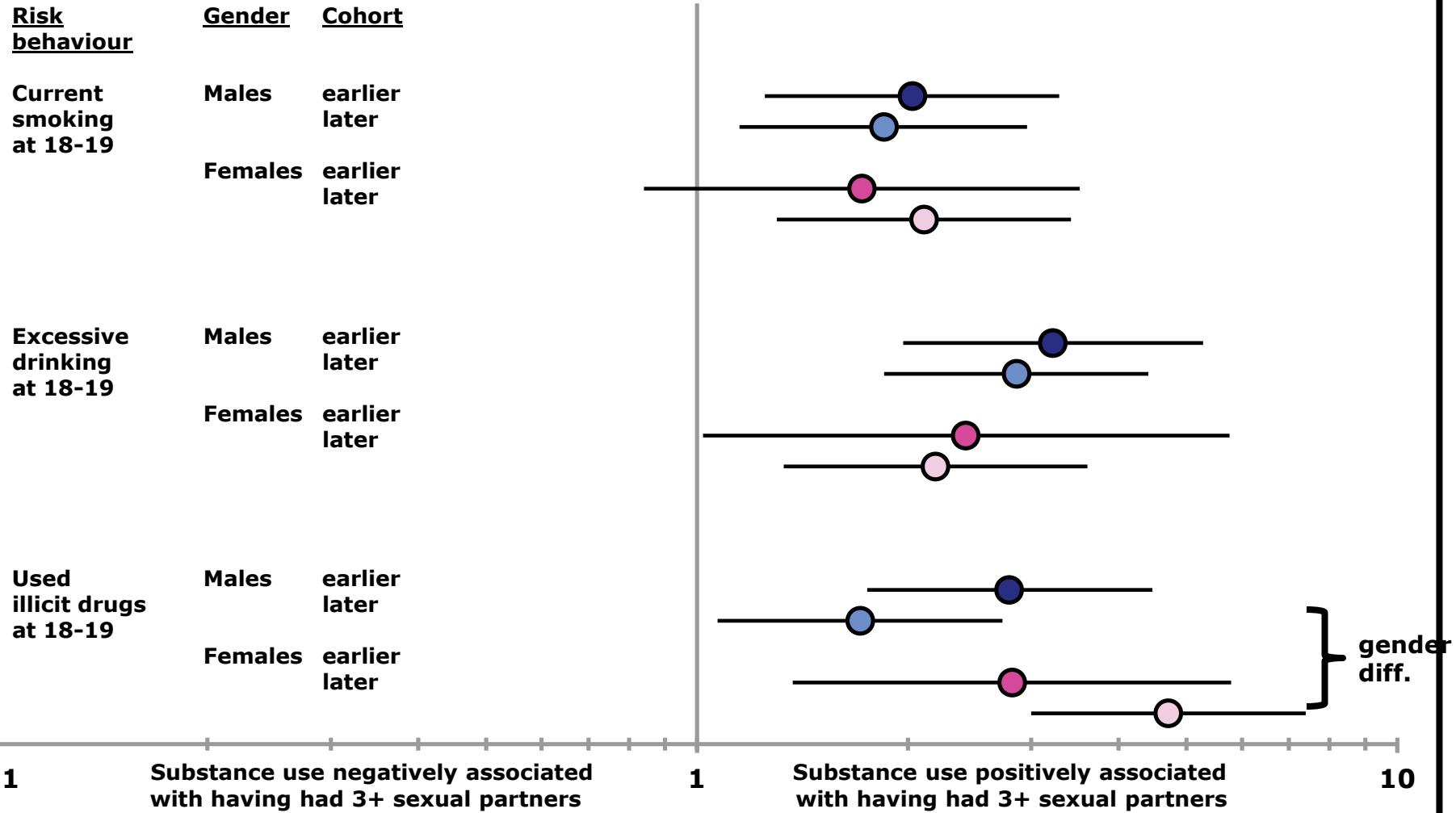
Mutually adjusted associations between older adolescent substance use and multiple sexual partners among males and females in the two cohorts



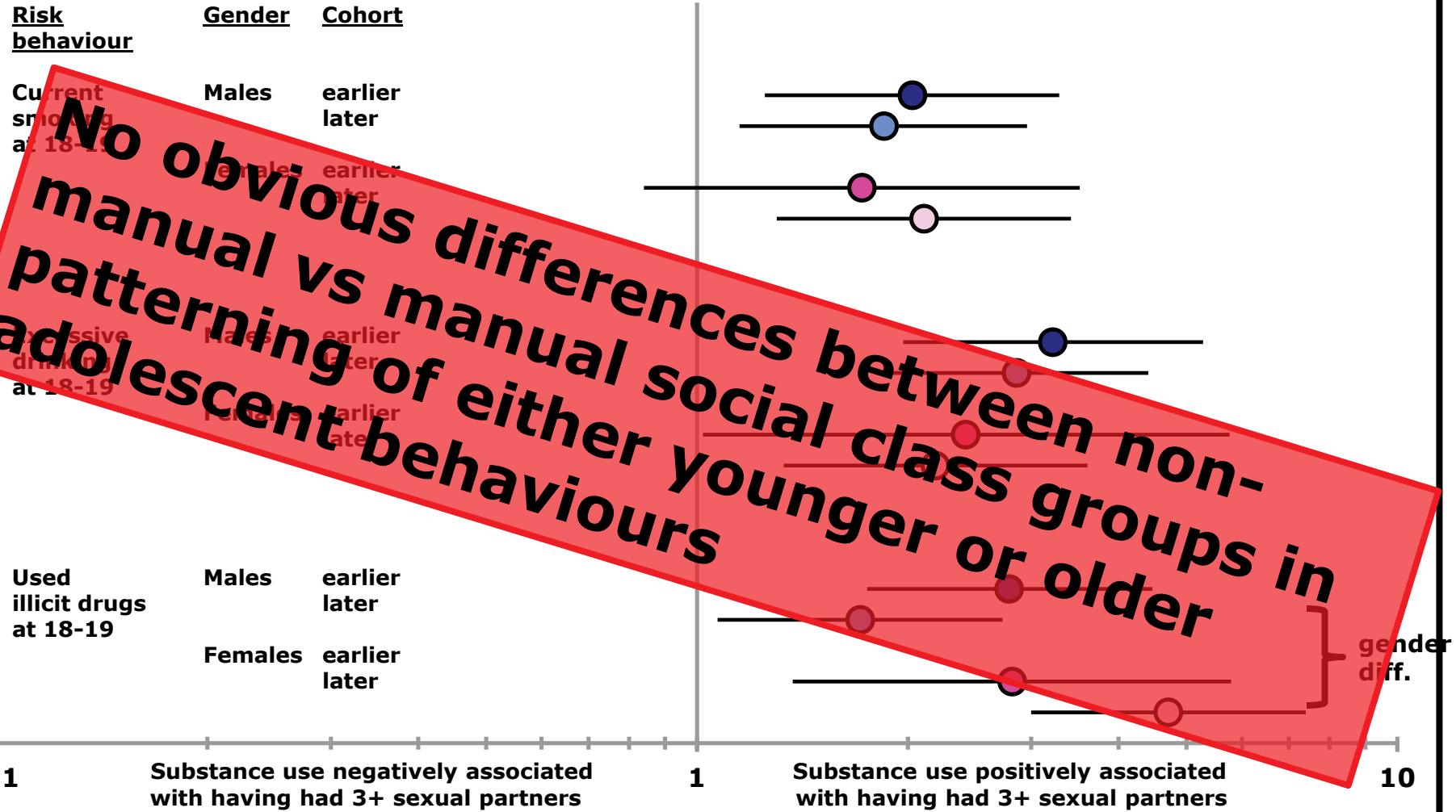
Mutually adjusted associations between older adolescent substance use and multiple sexual partners among males and females in the two cohorts



Mutually adjusted associations between older adolescent substance use and multiple sexual partners among males and females in the two cohorts



Mutually adjusted associations between older adolescent substance use and multiple sexual partners among males and females in the two cohorts



Part 2: Relationships between risk behaviours: comparison of two West of Scotland cohorts

Summary

- Strong associations between:
 - younger adolescent substance use and early sexual initiation, and
 - older adolescent substance use and having had multiple sexual partners.
- Clustering was broadly similar for males and females and between social class groups.
- Despite higher rates of drinking, drug use and risky sexual behaviour in the later cohort, relationships between each substance and risky sexual behaviour showed little or no change over time.

Implications

- High prevalence of adolescent risk behaviours indicates a need for improved, truly preventive, interventions.
- Public health policy and strategies need to reflect both widespread prevalence of risk behaviours (universal approach) and the particular vulnerability to certain behaviours among more disadvantaged young people (targeted approach).
- Policy should reflect strong relationships between risk behaviours and support more integrated approaches (e.g. sexual health clinics offering advice and counselling for alcohol and illicit drug use).
- Clustering health-risk behaviours partly reflects shared underlying determinants – so need to address broad determinants of risk behaviours.
- High rates and strong associations between younger adolescent substance use and sexual risk behaviour mean preventive measures should start earlier.