

**Is moderate drinking beneficial for health?
*The case of health-selection bias among
non-drinkers***

ICLS Alcohol & Health Policy Seminar
Tuesday 21st June 2016

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Today I'll presenting findings that actually came from my PhD which I completed roughly two years ago. I am going to explore the claims that alcohol in moderation might be good for health. In particular I am going to focus on potential bias that might come from the comparison group of non-drinkers being people who probably don't drink because of poor health.

Questions

- Why is it believed that alcohol in moderation is beneficial for health?
- Why is it interesting to study non-drinkers?
- What is the relationship between poor health and non-drinking through the life course?

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In this presentation I go through three questions. Firstly I'll give some background to why it is believed that alcohol in moderation might be beneficial for health. Based on this outline it will become apparent why it's interesting to study non-drinkers, why are they an important group to study in epidemiological studies. And finally, I'll present my findings which explore the relationship between poor health and non-drinking through the life course.

Examples of reporting in the media

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7 September 2011 Last updated at 04:39

A drink a day 'is good for older women's health'

By Michelle Roberts
Health reporter, BBC News

Women who enjoy an alcoholic drink in the evening tend to be healthier as they move into old age, research shows.

This nightcap could be a pint of beer, a glass of wine or a single measure of spirit, **PLoS Medicine** journal reports.

A study of 14,000 women concluded that those who drink in moderation were far more likely to reach 70 in good health than heavier drinkers or abstainers.



A sherry before bedtime may be advisable

Spreading consumption over the week is better than saving it for the weekend, the researchers say.

Women who drink little and often fared better than occasional drinkers.

Compared with non-drinkers, women in their mid-50s who drank 15-30g of alcohol (one to two drinks) a day had a 20% greater likelihood of achieving what the US researchers call "successful ageing", meaning good general health free of conditions like cancer, diabetes and heart disease in their 70s and beyond.

And women who drank on 5-7 days of the week had almost double the

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23 February 2011 Last updated at 01:20

Alcohol in moderation 'can help prevent heart disease'

An alcoholic drink a day can help keep heart disease at bay, according to a review of 30 years of research.

The work, published in the **British Medical Journal**, showed a 14% to 25% reduction in heart disease in moderate drinkers compared with people who had never drunk alcohol.



Another article, by the same Canadian research group, showed alcohol increased "good" cholesterol levels.

Scientists at the University of Calgary reviewed 84 pieces of research between 1980 and 2009

But experts said this was not a reason to start drinking.

For many years, studies have suggested that drinking alcohol in moderation has some health benefits.

Scientists at the University of Calgary reviewed 84 pieces of research between 1980 and 2009.

Reduced risk

One unit of alcohol in the UK, equivalent to **half a pint of normal beer**, contains 8g of pure alcohol.

This review showed that the overall risk of death was lower for those

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Alcohol 'protects men's hearts'
A little alcohol 'can be healthy'
Alcohol 'quickly' cuts heart risk

Source: BBC News

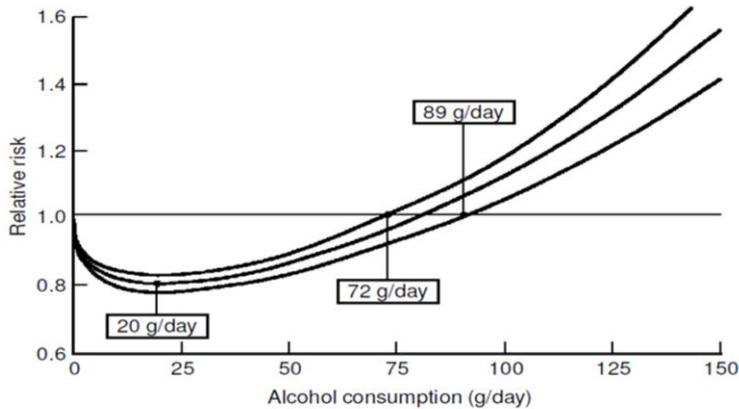
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These are examples of reports of the health benefits of alcohol which will be familiar to many of you. These news stories from the BBC website read, "A drink a day is good for older women" and on the right "Alcohol in moderation can help prevent heart disease". So what's key behind these messages is that alcohol in small quantities, in moderation or one glass a day, may actually be protective for your health.

Background

The J/U-Curve among middle age cohort in cohort studies

Alcohol consumption against risk of coronary heart disease



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Corrao, G, et al, *Addiction*, 2000. **95**(10): p. 1505-1523.

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So why do researchers and academics and even policy makers think that alcohol in moderation might be good for you? Well, the belief largely comes from large cohort studies which find this data relationship between alcohol consumption and your risks of different diseases. Largely these studies have focused on coronary heart disease but they've also found this data relationship for many other diseases including all cause mortality.

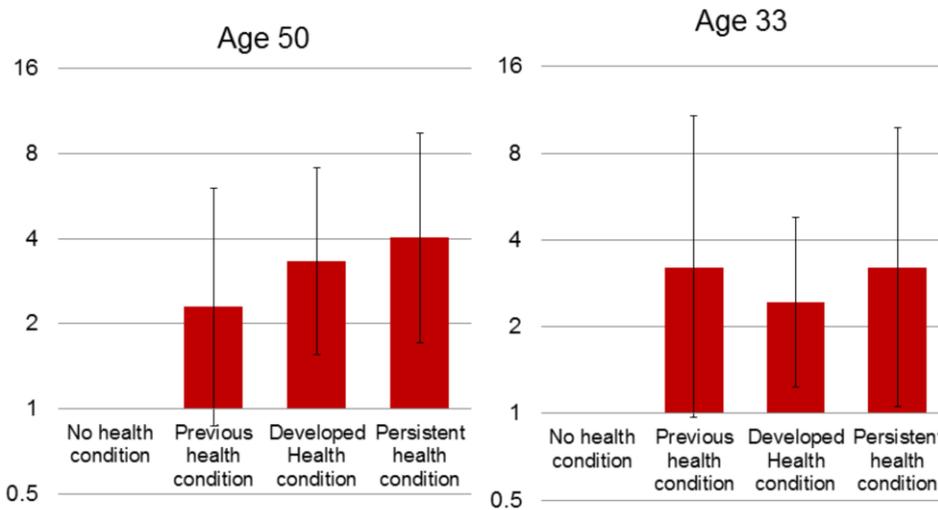
Potential sources of biases among ex-drinkers

Developing a health condition is associated with ceasing alcohol consumption (ex-drinkers)

- Also known as the ‘sick-quitter’ bias first coined by Shaper, & Wanamathsee and colleagues back in 1988

So first of all I am exploring two hypotheses, the first relates to those who quit drinking so among non-drinkers we have those who quit drinking and we also have those who don't drink alcohol throughout their life, abstainers. So firstly among ex-drinkers a potential source of bias could be that when someone may actually quite drinking because their health deteriorates or because of problems of alcohol itself. And this is also known as the sick quitter bias and it was first coined by two colleagues back in 1988. So it's been a well-known source of bias for considerable amount of time.

Change in health and ex-drinking (NCDS 1958)



And then these are my findings from the National Child Development Study 1958 which is a longitudinal study like the ones that you've heard about but it follows a cohort of around 17,000 babies born in 1958 at successive decades of their lives. So I looked at different ages of the life course and I looked to see whether developing a health condition was associated with simultaneous reduction in, ex-drinking. So just on the X-axis we have people who didn't have a health condition across successive waves of the study. So these are not. An advantage of these measures of health is that they were retrospective reported, they were reported when the cohort members were younger.

Potential sources of bias among lifetime abstainers

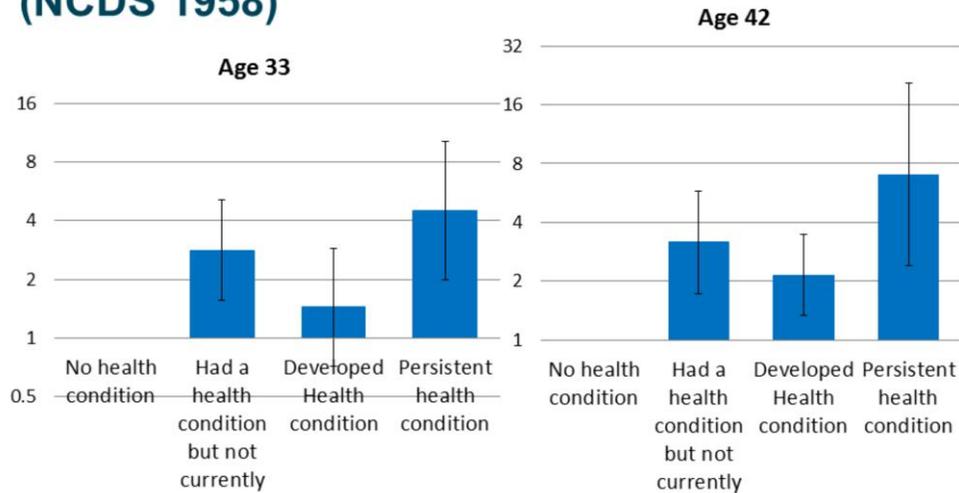
Continuous poor health from an early age is associated with continuous non-drinking (lifetime abstinence)

This phenomenon occurs across the life course

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And what I'm interested in seeing as well where they didn't have a health condition, whether developing a health condition was associated with ex-drinking.

Persistent poor health and lifetime abstention (NCDS 1958)

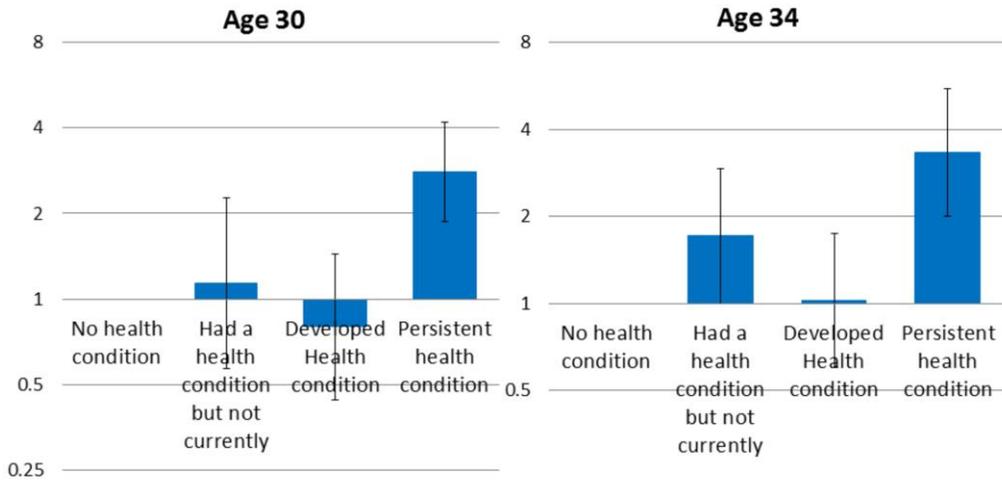


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And you can see that at age 50 there is an increase and you also see that ex-drinkers maybe developed a health condition. You have almost over three times also someone with no health condition will become an ex-drinker. And this one is statistically significant because the 95% confidence in this doesn't cross the line at one. And then I did the same at age 42 and we found the same thing, developing a health condition was associated with ex-drinking.

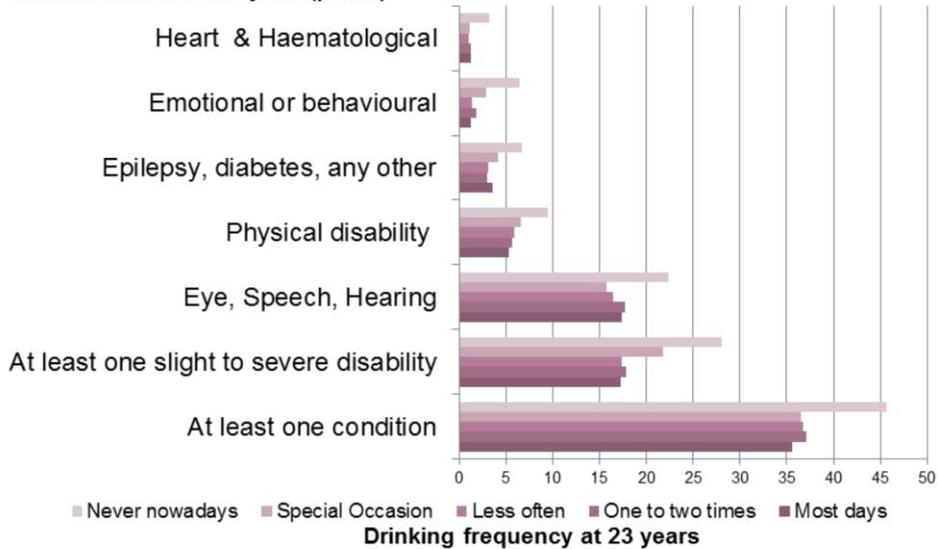
Persistent poor health and lifetime abstinence (BCS1970)



Which brings me on the next source of bias. So not only developing a health condition maybe associated with ex-drinking, it could also be the case that poor health from an early age and continuous poor health may be associated with continuous non-drinking. So in other words some people may never take up drinking because of poor health in childhood. So I did a similar analysis but this time I was more interested to see whether on-going poor health from an early age, so this is poor health from a previous wave so at age 23, whether that was associated with not ever taking up drinking. So in each of the waves these members never said that they drank and you can see that there people have persistent health conditions are also likely to have never drunk at age 33. And we see the same thing at age 42 as well.

NCDS 1958

Medical conditions at 16 years ($p < 0.05$)



And then I replicated the findings with the British Cohort Study which is like the National Child Development Study but it follows a cohort of babies born in 1970 and you can see that we get the same findings. So people who haven't drunk at age 30 were more likely to have a persistent health condition and also we get the same situation at age 34.

So it seems that having poor health from an early age is associated with persistent non-drinking from an early age or in other words lifetime abstinence which may mean that there is bias in the lifetime abstainer group.

And this is just a slide showing the results that looked at medical conditions at age 16 years by drinking frequency and what we're interested in is that people who said that they never drink nowadays at age 23 years and you can see that the bar is higher for never nowadays drinkers or non-drinkers. So for example around 46% of those who said they never drank at age 23 had a recent medical condition.

Conclusion

- Poor health seems to be directly linked to both ex-drinking and lifetime abstention
- This may create health selection biases into non-drinking, and suggests non-drinkers are a poor comparison group to drinkers
- Non-drinkers are not like the 'average' in terms of health (and social economic status)

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So we can think that maybe it's quite intuitive that if you have a health condition you may be more likely not to drink alcohol. For example certain medications for these conditions like epilepsy prohibits the use of alcohol or alternatively alcohol may mess up with your like coordination and that might prevent some people with for example disabilities from drinking. But there might be also indirect pathways in that people who are more disadvantaged in terms of health may be more socially excluded as you saw from Annie's presentation that social occasions was a strong influence behind people taking up drinking.

People who are more disadvantaged may be more socially excluded and may not have as much social opportunities to drink after all so it's kind of the social norm to drink so it would be interesting to see whether this is the case in a country where alcohol isn't the norm.

And so the key points are that poor health seems to be directly related to both ex-drinking and lifetime abstention. This may create health selection biases into non-drinking and suggests that non-drinkers are a poor comparison group to drinkers. Non-drinkers appear not to be the average in terms of health but also in terms of socioeconomic status,

so they tend to come from lower income and lower educational groups which may be contrary to the perceived notion that actually it's poorer people who drink loads and heavy quantities. I think that is true because poorer people tend to suffer more greatly from the harms but I think there might be polarisation so people in low SES, socioeconomic groups may not drink or if they drink they drink really heavily.

Discussion

- If there is a 'health benefit' it is likely to be small, and negated with heavier consumption
- 'Health benefit' of alcohol does not weigh up against risk of other health conditions e.g. cancer
- 'No safe level' reflected in new drinking guidelines

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And so discussion if there is a health benefit it's likely to be small and it's also negated with heavier consumption given what we know about the harms of alcohol really should there be a focus on a health benefit. Also a health benefit of alcohol does not weigh up against other risks of other conditions. So new research has been finding that rather there being a [??, words unclear, 1.24.17] there's a linear relationship between alcohol and certain cancers.

And actually the "there is no safe level" view is effected in the new drinking guidelines that came out this year which actually have explicitly in their guidelines to have regular drink free days whereas the previous guidelines didn't mention abstaining whatsoever, it was a limit per day so not exceeding two to three units per day but now we see that actually not drinking is actually recommended and this may be a reflection of there being more of a disagreement with there being a health benefit of alcohol.

References

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Acknowledgements

Dr Noriko Cable, Dr James Kneale, Dr Nicola Shelton, Professor Sir Michael Marmot

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I'd just like to acknowledge my co-authors and thank you to my funders as well.

Notes: ICLS hosted a policy seminar on Alcohol and Health Policy Seminar at UCL in June 2016. The seminar was chaired by Richard Bartholomew, (former), Chief Research Officer, Children, Young People and Families Directorate, Department for Education and the presentations coordinated by Professor Amanda Sacker, ICLS Director.

Transcripts from this event, including this paper, have been made available via the ICLS Occasional Paper Series. This series allows for those who were not able to attend to read an account of the presentation. Other papers in the series include:

OP19.1 Drinking behaviours at the start of adolescence. Yvonne Kelly

OP19.2 Taking a life course perspective – does previous drinking matter? Annie Britton

OP19.4 Alcohol consumption and cognitive function. Meena Kumari

Speaker: Linda Ng Fat, Research Associate UCL, Epidemiology & Public Health

ICLS Occasional Paper 19.3 June 2016

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