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Understanding Policy Amenable Risk Factors: Alcohol consumption and long-term care use among people over 65 years old

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Disclaimer

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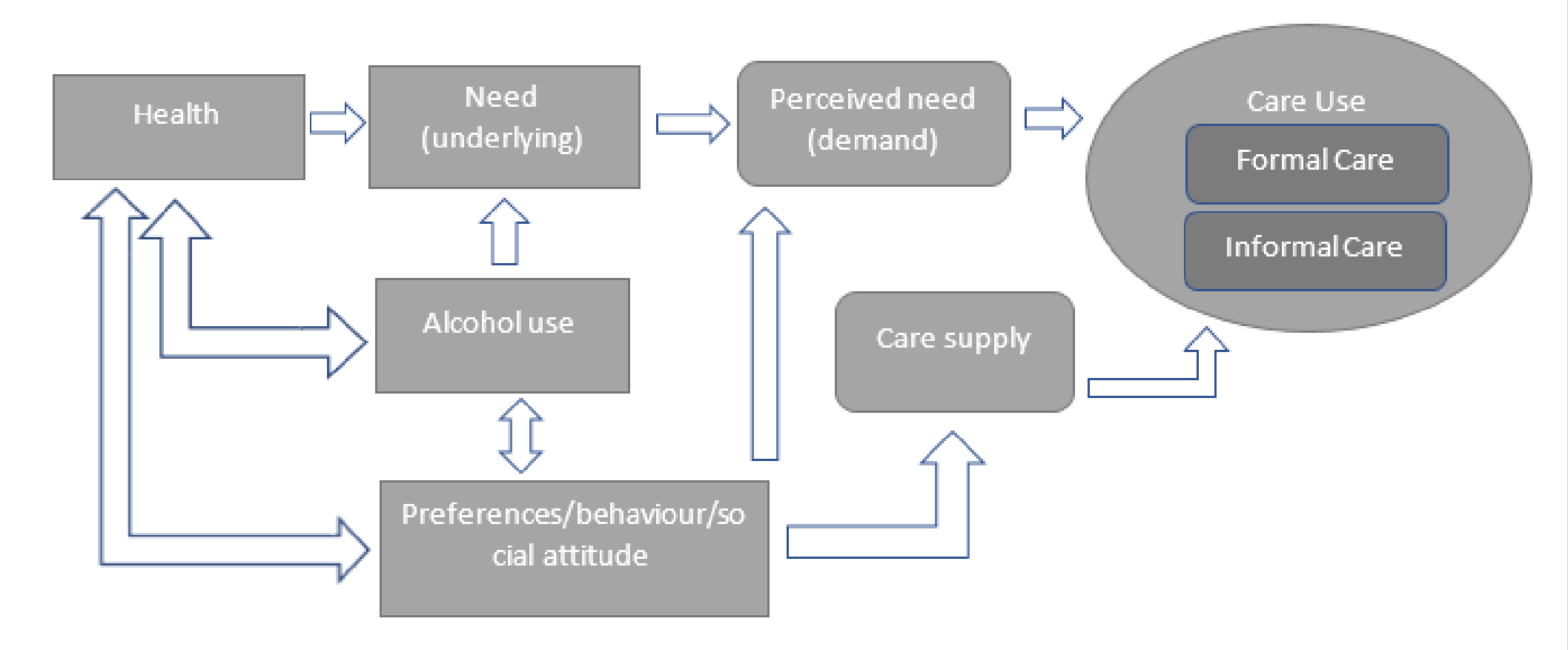
Introduction

- Assess the impact of previous alcohol consumption to the onset of formal and informal long-term care (LTC) use among people 65+.
- We anticipate the relationship between alcohol use and LTC is complex and nuanced, especially when taking into account preferences and social attitudes
- The existing literature has mainly focused on risk factors associated with a nursing home entry, but this evidence is primarily outdated, not UK-focused, and does not look into other types of care, such as informal care.
- A study on Canadians over 50 years old found that moderate drinking is negatively associated with the receipt of LTC in older age compared to non-drinkers or infrequent drinkers (Kaplan et al. 2014).
- More attention paid to how alcohol may affect development of certain health conditions, like dementia or heart conditions, with findings being mixed, some suggesting moderate alcohol to have a ‘protective’ or a J or U shaped effect towards a range of health conditions.

Conceptual Issues



Hypotheses

- Frequent drinking increases the likelihood of LTC use in the future;
- The effect of drinking on care use is primarily through the effects on health;
- Care seeking and care providing may be negatively impacted by more frequent drinking;
- Effects may differ by the care type: formal/informal.

Method

- ELSA waves 2-8 , 2004-2017, adult population of 65+
- Regressions run by gender and pooled, excluding care users in the previous wave
- **Dependent variables**: formal care receipt and informal care receipt, both binary
- **Main variable of interest**:
  - Alcohol consumption frequency last 12 months, lagged, categorical (None & infrequent - once or twice a year to once or twice a month; Regular use - once to four days a week, and Frequent - five days a week to every day)
- **Instrumental variable:**
  - The polygenic score (PGS) for daily alcohol intake, obtained from the ELSA Polygenic Scores dataset
  - Also trialled alcohol consumption frequency spatial lag at Local Authority level, previously also tried alcohol related hospital admissions, alcohol related mortality and number of pubs per LA
- **Control variables**: base specification (educational qualifications, ethnicity, age, number of female children, home ownership, ability to rely on friends or family members in case of a problem); modified specifications with further controls: behavioural (employment, physical activity, smoking), mental health, marital indicators (being married, alone); health indicators (high blood pressure, diabetes, cancer, lung disease, heart condition, stroke, psychiatric conditions, arthritis), and wave indicators
- Models: **probit** (uninstrumented approach); **eprobit** (instrumented approach)

Results

- Two main samples for instrumented regressions are: males - 6,378, females - 6,999, with formal care (FC) uptake: 2.1% and 4.3% respectively, and informal care (IC): 7.5% and 11.3% respectively.
- **Uninstrumented results**: FC: Previous **Regular** alcohol consumption is statistically significantly associated with **lower FC use** in pooled specifications and for females; IC: both previous **Regular** and **Frequent** alcohol consumption is statistically significantly associated with **lower IC use** in all samples (pooled, males, females) – a sign of endogeneity of alcohol variable?
- **Instrumented results**:
  - **FC**: in pooled sample, previous Frequent alcohol consumption is related to a statistically significant increase in FC use, but this relationship is not significant for male or female samples, while previous Regular alcohol consumption relationship with FC is not statistically significant, however all these relationships are of positive sign;
  - **IC**: all relationships between previous Regular or Frequent alcohol intake and IC are statistically insignificant and of negative sign in all three samples;
  - The polygenic score (PGS) for daily alcohol intake appears to be a good instrument, significantly related to alcohol consumption with ~3 Z value, and should not affect FC of IC use.
- **Sensitivity analysis**:
  - **Uninstrumented regressions**: results remain mostly consistent with inclusion of more variables, the relationship between alcohol use and IC is mostly negative and significant, and insignificant for FC, however, calculating average marginal effects for males reveal some positive and borderline significant results;
  - **Instrumented regressions**: trialling spatial lag as an IV and different specification approaches show results mainly consistent for FC, some differences between spatial lag and polygenic score as IVs for IC, but mostly consistent when taken into account no care previously; inclusion of different sets of variables does not change significance of results (mostly insignificant) or their sign (positive for FC, and negative for IC).

Conclusions

- Difference in uninstrumented and instrumented results suggest alcohol variable is indeed prone to endogeneity;
- When accounting for endogeneity with IV approach, we find a statistically significant increase in FC in a pooled sample, but no other statistically significant relationships between alcohol use and FC/IC;
- The direction of the relationship with formal care tends to be of a positive sign while with informal care - of a negative sign;
- Instrumenting should allow us to isolate the effect of alcohol to its most likely transmission mechanism – through the health channel;
- Possible 'self-selection' into drinking: high consumption and low care seeking;
- Chronic health conditions may reduce the appeal of alcohol, people using LTC may have less opportunity or willingness to drink;
- Effect on IC likely signals damage to relationships with family and friends, leaving the burden of care to be picked up by formal care;
- Preferences, premature mortality or other unobservables may be generating downward bias.

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