Global multi-level analysis of demographic, behavioural and environmental factors associated with HCV antibody prevalence in people who inject drugs

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Background & Aim

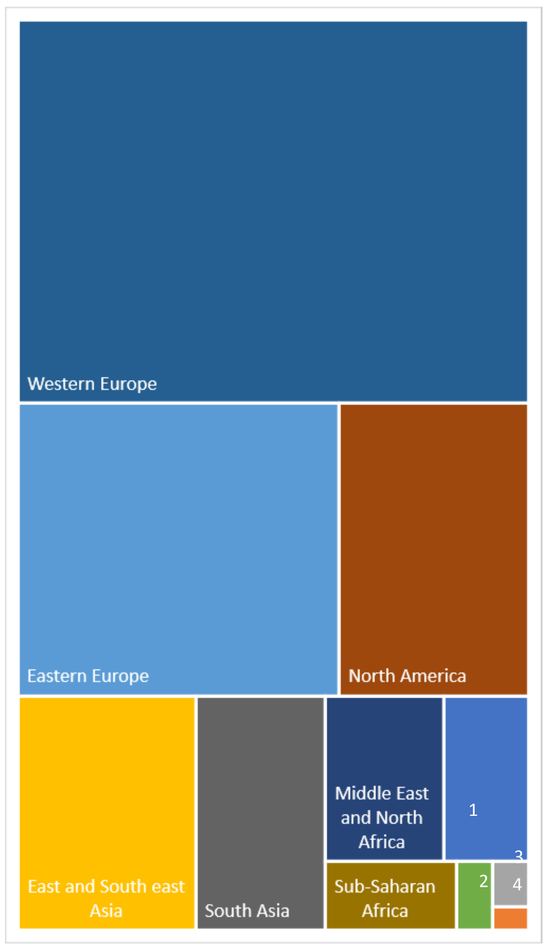
- Risk for hepatitis C virus (HCV) is shaped by the environment in which injecting drug use occurs
- Understanding the contribution of the risk environment to HCV acquisition and prevalence can inform prevention and elimination efforts
- We aimed to evaluate associations between risk environment factors and HCV antibody prevalence in people who inject drugs globally

Methods

- We undertook a systematic review to identify studies of anti-HCV prevalence in people who inject drugs
- We extracted anti-HCV prevalence from each study, as well as pre-specified study (e.g. year of data collection) and sample characteristics (e.g. percentage of sample female)
- National indices of health, social welfare, and development hypothesised to be associated with anti-HCV prevalence were added to the study-level data
- Associations were evaluated using scatter plots and linear regression

Data availability

- We identified 569 studies reporting HCV antibody prevalence among people who inject drugs
- The greatest number of studies were from Western and Eastern Europe (Figure 1).



1. Australasia; 2. Latin America; 3. Central Asia; 4. Caribbean

Figure 1: Data available for ecological analyses of anti-HCV in people who inject drugs

Results

- Anti-HCV prevalence increased with the proportion of the study sample that was female; age of the sample; duration of injecting drug use within the sample; and higher Human Development Index values (Figure 2)
- Anti-HCV prevalence decreased with more recent year of data collection and higher Gender Inequality Index values (Figure 2)

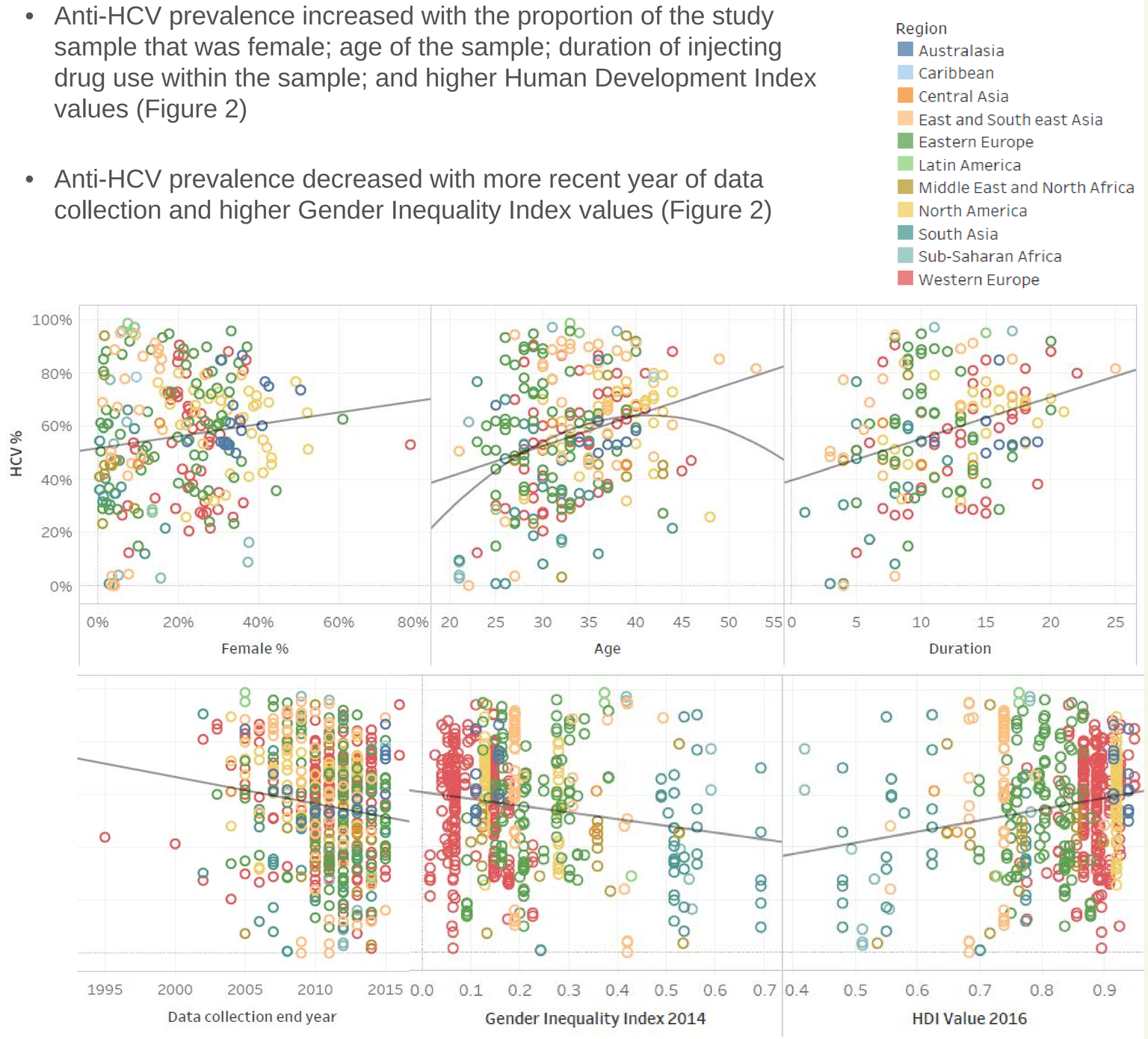


Figure 2: Scatter plots of key ecological variables against anti-HCV prevalence in studies if people who inject drugs

- Similar results were obtained after adjusting for general population anti-HCV prevalence

Conclusions

- These ecological analyses highlight that anti-HCV prevalence is often highest in high-income countries with established populations of people who inject drugs
- Anti-HCV prevalence is declining among people who inject drugs globally; this does not preclude increasing epidemics in specific locations and regions
- Female gender may play a role in HCV acquisition in people who inject drugs; a range of social and biological factors likely influence this
- Analyses were dominated by studies from Western and Eastern Europe. More and better quality data are needed from other world regions to improve our understanding of the global epidemiology of HCV in people who inject drugs
- These studies reported anti-HCV prevalence. As access to HCV treatment increases, epidemiological studies will need to measure viremic HCV to ensure accurate estimates of ongoing HCV disease burden and the level of need for antiviral therapies

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