Measuring the impact of socio-economic deprivation on rates of sexually transmitted infection diagnoses among black Caribbeans in England

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Background

- Ethnic disparities in the rates of sexually transmitted infection (STI) diagnoses have been reported in many developed countries and are a major source of health inequality worldwide.

- In the UK, disproportionately high STI and HIV rates are reported in black Caribbeans and black Africans.

- Socioeconomic deprivation (SED) is a likely contributing factor in this association.
Methods

Data from all 208 STI clinics in England in 2013 were obtained from

**GUM Clinic Activity Dataset version2 (GUMCADv2)**

mandatory surveillance system for all STI diagnoses and services in England

Diagnosis rates of
- gonorrhoea
- genital warts (1st episode)
- genital herpes (1st episode)
Methods

Data from all 208 STI clinics in England in 2013 were obtained from

**GUM Clinic Activity Dataset version2 (GUMCADv2)**

mandatory surveillance system for all STI diagnoses and services in England

Diagnosis rates of
- gonorrhoea
- genital warts (1\textsuperscript{st} episode)
- genital herpes (1\textsuperscript{st} episode)

Socioeconomic deprivation was measured using

**Index of Multiple Deprivation (IMD)**
a measure of area-level deprivation
Methods – Statistical measures

- **Crude rate ratios** (per 100,000 population) for each STI by ethnic group
  - Number of diagnoses / population

- Poisson regression was used to derive unadjusted and IMD-adjusted **incidence rate ratios (IRRs)** for each STI by ethnic group
  - Comparing risk between ethnic groups
Methods – IMD domains

IMD score

- Income
- Education, skills and training
- Living environment
- Barriers to housing and services
- Employment
- Health and disability
- Crime
- Employment
- Education, skills and training
- Living environment
- Barriers to housing and services
- Health and disability
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- Living environment
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Methods – IMD domains

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Results – IMD score distribution by ethnic group

[Bar chart showing the IMD score distribution for different ethnic groups: White, Black African, Black Caribbean, Black other, Asian, Mixed, Other ethnicity. The chart indicates the percentage of each group falling into each IMD score category from 1 (least deprived) to 5 (most deprived).]
Results – IMD score distribution by ethnic group

Data sources: Census, 2011; English indices of deprivation, 2010
Results – Crude rates for gonorrhoea by ethnic group

Crude rates per 100,000 population
Results – IRRs for gonorrhoea by ethnic group

Legend
- Unadjusted IRR
- 95% CI

Not all ethnic groups are reported

IRR: Incidence Rate Ratio
Results – IRRs for gonorrhoea by ethnic group

Legend
- Unadjusted IRR
- 95% CI

White British
White Irish
White other
Black African
Black Caribbean
Black other
Indian
Pakistani
Bangladeshi
Chinese

Not all ethnic groups are reported

* IRRs adjusted for IMD
Results – IRRs for gonorrhoea by ethnic group

Not all ethnic groups are reported

* IRRs adjusted for IMD

IRR: Incidence Rate Ratio

Legend
- Unadjusted IRR 95% CI
- IMD adjusted IRR 95% CI
Results – IRRs for gonorrhoea by ethnic group

Not all ethnic groups are reported

* IRRs adjusted for IMD

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- Unadjusted IRR
- IMD adjusted IRR
- 95% CI
Results – IRRs for gonorrhoea by ethnic group

Not all ethnic groups are reported

* IRRs adjusted for IMD

IRR: Incidence Rate Ratio
Results – Crude rates for genital herpes by ethnic group

Crude rates per 100,000 population

- White British
- White Irish
- White other
- Black African
- Black Caribbean
- Black other
- Indian
- Pakistani
- Bangladeshi
- Chinese
- Asian other
- Mixed
- Other ethnicity

Crude rates
Results – IRRs for genital herpes by ethnic group

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Unadjusted IRR</th>
<th>95% CI</th>
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<tbody>
<tr>
<td>White British</td>
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<td>Chinese</td>
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</tbody>
</table>

Not all ethnic groups are reported
Results – IRRs for genital herpes by ethnic group

Legend
- Unadjusted IRR
- IMD adjusted IRR

Unadjusted IRR
95% CI

IRR: Incidence Rate Ratio

Not all ethnic groups are reported

* IRRs adjusted for IMD
Results – Crude rates for genital warts by ethnic group

- White British
- White Irish
- White other
- Black African
- Black Caribbean
- Black other
- Indian
- Pakistani
- Bangladeshi
- Chinese
- Asian other
- Mixed
- Other ethnicity

Crude rates per 100,000 population
Results – IRRs for genital warts by ethnic group

Not all ethnic groups are reported

Legend
- Unadjusted IRR
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White British
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IRR: Incidence Rate Ratio
Results – IRRs for genital warts by ethnic group

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<td>0.98 - 2.37</td>
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<td>2</td>
<td>1.27 - 3.19</td>
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<td>Black Caribbean</td>
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* IRRs adjusted for IMD

Not all ethnic groups are reported
Limitations

- IMD is a measure of residential area-level, not individual, deprivation.

- Due to a lack of population data at the small geographical unit, it was not possible to stratify by age, gender and sexual orientation and only ethnicity and deprivation could be considered at the same time in the model. Using multivariate logistic regression similar results were observed.
Conclusions

- In England, rates of gonorrhoea, genital herpes and genital warts diagnoses among black ethnic minorities, especially black Caribbeans, are higher compared to those of other ethnic groups.

- SED is a key determinant of STI rates, with the highest rates in the most deprived areas.

- High STI rates in black ethnic minorities persist even after adjustment for SED.
Conclusions

- Background prevalence of untreated disease
- Racial discrimination perception
- Drug and alcohol use
- Sexual behaviour
- Social and sexual networks
- Health-seeking behaviour
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STI risk
Future steps

Understanding the context and drivers associated with transmission of STIs is vital to inform the development of tailored interventions
NIHR Health Protection Research Unit in Blood Borne and Sexually Transmitted Infections
Theme A: Understanding risk and risk reduction

- Improve understanding and knowledge-base of behaviours, attitudes, and other factors influencing STI and BBV risk

- Inform and support the targeting and delivery of timely interventions which maximise patient and public health benefit

- Initial focus on two priority population groups:
  - Black Caribbean and black ‘other’ populations
  - MSM

Poster n. P233 – Wayal et al. “Understanding the greater burden of STIs among black Caribbeans in the UK: evidence from a systematic review”
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Thank you