Social inequity, gender, and Helicobacter pylori infection in Arctic Canada.


1 Introduction

Helicobacter pylori infection, which causes chronic stomach inflammation and increases stomach cancer risk, has an elevated prevalence in northern Canada relative to southern Canada. While high prevalence of H. pylori infection has been reported for northern Indigenous communities, little information on the burden of H. pylori-associated disease specific to women has been reported. In Canadian surveys of self-reported health, less than half of Indigenous women report their health as "excellent" or "very good", a notably lower proportion relative to Indigenous men and non-Indigenous women - and are more likely than non-Indigenous women to be diagnosed with a chronic health condition.

H. pylori prevalence increases as socioeconomic status (SES) decreases. Income is used almost universally in research to measure SES, even though income is difficult to ascertain accurately and does not capture key wealth inequalities such as purchasing power. The Canadian Depressive Index (CDI) quantifies SES without using income. Instead, it uses:

- Home ownership
- Education
- Food security

2 Methods

Assessment of CDI component variables:
- By structured questionnaire during 2007-2017
- Household income
- Education status
- By Canadian Household Food Security Survey Module, adapted by authors for Arctic communities during 2017-2018.

Statistical Analysis:
- CDI Score used as an ordinal measure of SES (Table 1)
- CDI Score of 2 used as reference category because it is the mode across Canada
- Logistic regression estimated unadjusted odds ratios (OR) and 95% confidence intervals (CI) for the effect of SES/gender variables on H. pylori prevalence for all households and separately for households led by unpartnered women.*

Table 1: Scoring the CDI. Raw scores of 4 and 5 share a category because raw scores of 5 are rare among Canadians.

<table>
<thead>
<tr>
<th>Education</th>
<th>Home Ownership</th>
<th>Food Security</th>
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<tbody>
<tr>
<td>CDI Score</td>
<td>Interpretation</td>
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3 Results

CDI:
- H. pylori prevalence was higher at higher deprivation levels
- Impact strongest in households headed by unpartnered women, though estimates are imprecise

Food insecurity:
- Food insecurity was rare in participating households (<20%)
- 4% of all households reported severe food insecurity
- 7% of households led by unpartnered women reported severe food insecurity

- Very strong association between severe food insecurity and H. pylori prevalence.
- Strong in women (OR: 10 [95% CI: 2.9, 39]) and in households led by unpartnered women, though estimates are imprecise

Table 2: H. pylori prevalence by selected SES indicators and head of household status. (H/H, H: pylori)

4 Conclusions

Both the composite CDI indicator and the food insecurity component were positively associated with H. pylori prevalence among CANHelp community project participants, particularly in households led by unpartnered women. Thus, the M. pylori-associated disease burden appears to be influenced by social and gender inequities within Indigenous Arctic Canadian communities.

5 Acknowledgements