Mortinaissance chez la population Arabe, Québec, 1981-2015

Ga Eun Lee, Marianne Bilodeau-Bertrand, Nathalie Auger

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www.inspq.qc.ca
• Centre of expertise and reference for public health in Québec

• Maternal-infant health surveillance
  • Perinatal health inequalities
  • Limitations with available data
Stillbirth: perinatal health outcome

- Death of an infant in utero
- Indicator of perinatal health inequality
- Data from European countries:
  - Risk of stillbirth higher in migrants from Arab regions
- Limited data on perinatal health of Arabs in Québec
Arabic speakers in Québec

Québec home to majority of Arab-Canadians

Arabic language in Québec:

• Most frequent immigrant mother tongue in the province (18%)

• Top source countries:
  • Morocco, Algeria, Tunisia, and Syria
  • Leading sources of newcomers to province
Study objectives

• Investigate differences in stillbirth rates between Arabic, French/English, and other language speakers

• Identify causes of fetal death to be targeted for mortality reduction
Methods
Data

Live birth and stillbirth registration certificates for Québec, 1981-2015

- **Exposure: Language** (Arabic, French/English, Other)
  - Maternal/paternal mother tongue, language spoken at home
- **Outcome: Stillbirth** (≥ 500 g)
- Parental characteristics
  - Age, country of origin, education
Data analysis

- Risk ratios (RR) and 95% confidence intervals (CI)
- Adjusted for
  - Maternal age
  - Parity
  - Maternal education
  - Time period
Results
Results

From 1981 to 2015, there were...

- 2,979,449 live births
- 13,452 stillbirths

<table>
<thead>
<tr>
<th>Arabic speakers</th>
<th>No. stillbirths</th>
<th>Total no. births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic maternal mother tongue</td>
<td>283</td>
<td>72 677</td>
</tr>
<tr>
<td>Arabic paternal mother tongue</td>
<td>229</td>
<td>60 688</td>
</tr>
<tr>
<td>Arabic spoken at home</td>
<td>181</td>
<td>36 832</td>
</tr>
</tbody>
</table>
Results

Trends in stillbirth over time

- French/English
- Other
- Arabic

Stillbirth rate per 1000

## Results

<table>
<thead>
<tr>
<th></th>
<th>Stillbirth rate per 1,000 (95% CI)</th>
<th>Adjusted risk ratio* (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maternal mother tongue</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arabic</td>
<td>3.9 (3.4-4.4)</td>
<td>0.9 (0.8-1.0)</td>
</tr>
<tr>
<td>French/English</td>
<td>4.5 (4.4-4.6)</td>
<td>Referent</td>
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<tr>
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<td>4.1 (4.0-4.3)</td>
<td>Referent</td>
</tr>
<tr>
<td><strong>Language spoken at home</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arabic</td>
<td>4.9 (4.2-5.7)</td>
<td>1.2 (1.0-1.4)</td>
</tr>
<tr>
<td>French/English</td>
<td>4.4 (4.4-4.5)</td>
<td>Referent</td>
</tr>
</tbody>
</table>

*Adjusted for maternal age, parity, maternal education, and time period.
## Results

<table>
<thead>
<tr>
<th>Acculturation</th>
<th>Stillbirth rate per 1,000 (95% CI)</th>
<th>Adjusted risk ratio* (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low acculturation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arabic as mother tongue and home language</td>
<td>4.9 (4.2-5.7)</td>
<td>1.2 (1.0-1.4)</td>
</tr>
<tr>
<td><strong>High acculturation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arabic mother tongue, French or English home language</td>
<td>3.1 (2.5-3.6)</td>
<td>0.7 (0.6-0.9)</td>
</tr>
<tr>
<td>French or English</td>
<td>4.5 (4.4-4.6)</td>
<td>Referent</td>
</tr>
</tbody>
</table>

*Adjusted for maternal age, parity, maternal education, and time period.
### Results

<table>
<thead>
<tr>
<th>Maternal country of origin</th>
<th>Stillbirth rate per 1,000 (95% CI)</th>
<th>Adjusted risk ratio* (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>More vulnerable migrant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arabic speaking from Arab country**</td>
<td>4.7 (4.1-5.3)</td>
<td>1.2 (1.1-1.4)</td>
</tr>
<tr>
<td><strong>Less vulnerable migrant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arabic speaking from nonArab country</td>
<td>1.4 (0.6-2.3)</td>
<td>0.4 (0.2-0.7)</td>
</tr>
<tr>
<td>French/English from Canada</td>
<td>3.9 (3.7-4.0)</td>
<td>Referent</td>
</tr>
</tbody>
</table>

*Adjusted for maternal age, parity, maternal education, and time period.

**Countries in the Arab League or other regions where Arabic is the official language**
Results

Cause of fetal death

<table>
<thead>
<tr>
<th>Arabic</th>
<th>French or English</th>
</tr>
</thead>
<tbody>
<tr>
<td>19%</td>
<td>13%</td>
</tr>
<tr>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>26%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Fraction of stillbirths

- **Congenital anomalies**
- **Termination of pregnancy**
- **Undetermined cause**
- **Birth asphyxia**
- **Disorders of the placenta, cord or membranes**
- **Maternal complications**
- **Other causes**
Summary of results

- Arabic speaking women have varying stillbirth profiles
  - Risks elevated in…
    - Arabic speakers who use Arabic at home (low acculturation)
    - Arabic speakers from Arab countries (more vulnerable migrants)
  - Risks lower in other Arabic speaking groups
Summary of results

- Stillbirths mostly due to congenital anomalies, termination of pregnancies, and undetermined causes
  - Some anomalies are preventable
  - Folic acid supplementation
  - Understanding undetermined causes
  - Fetal autopsy
Limitations and challenges

• Lack of information on immigrant background
  • E.g. duration of residence, immigrant generation, family sponsorship, refugee status

• Self-reported language variables

• Generalizability of findings to other countries:
  • Most Arabic speakers in Québec originate from the Maghreb
Merci! Thank you!
Questions?

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