

Language inequality in infant autopsy: Implications for Anglophone Quebecers

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DES POPULATIONS

Overview



- Context
- Background and objective
- Methods
- Results
- Limits
- Key messages
- Implications

Context (1)



Institut national de santé publique du Québec (INSPQ)

- Population health surveillance
- Monitor the health of disadvantaged populations
- Identify emerging inequality
- Understand the health needs of minorities

Context (2)



Surveillance team

- Experts in epidemiology, statistics and demography
- Use administrative data provided by the Ministry of Health and Social Services
- Quantitative portraits on health

Research

Background – Infant mortality



Infant mortality is an important indicator of the health of a population.

Language is a determinant of infant mortality in Quebec.

- Disadvantaged Anglophones slowed the decrease in the total infant mortality over time.
- Between 2001-2006 and 2007-2012 the infant mortality rate increases from 4.4 to 4.6 in all Anglophones, and from 5.7 to 6.5 in disadvantaged Anglophones.

Background - Autopsy



Identifying the cause of death is key to preventing and reducing infant mortality.

Autopsy improves understanding of mechanisms of the disease and helps to determine the cause of death.

Greater use of autopsy has the potential to reduce mortality by determining the cause of death.

Despite the benefits, the use of autopsy is decreasing for infant deaths worldwide.

Background – Inequality in autopsy



Inequality in autopsy can lead to inequality in infant mortality.

Infant autopsy requires parental consent, and minority language populations may be less likely to have infant autopsy due to cultural factors or communication barriers.

Language-based inequality in infant autopsy is understudied.

Objective



We studied trends in infant autopsy for Anglophones and Francophones in Quebec.

- Quantitative study

Methods - Data

Death registration certificates, Quebec, 1989-2013

8,559 deaths among infants <1 year

Variables

- Autopsy status
- Language spoken at home (Anglophone, Francophone)
- Socioeconomic disadvantage (Disadvantaged, advantaged)

Methods - Data analysis

Rate of non-autopsy (per 100):

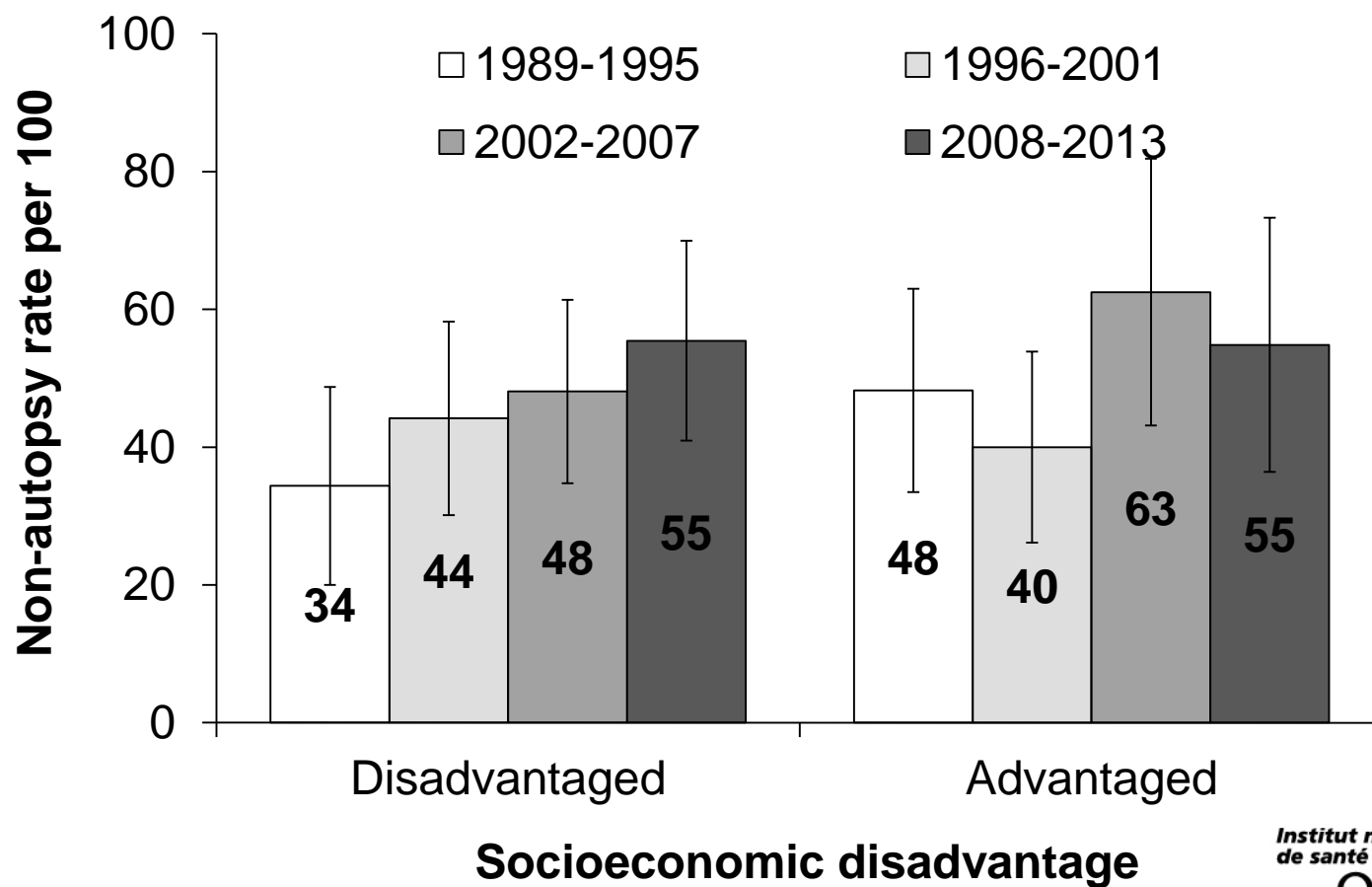
$$\frac{\text{Infants without autopsy}}{\text{Infant deaths}} * 100$$

Proportion of deaths (%):

$$\frac{\text{Infants deaths}_{\text{Anglophones disadvantaged}}}{\text{Infants deaths}_{\text{Anglophones}}}$$

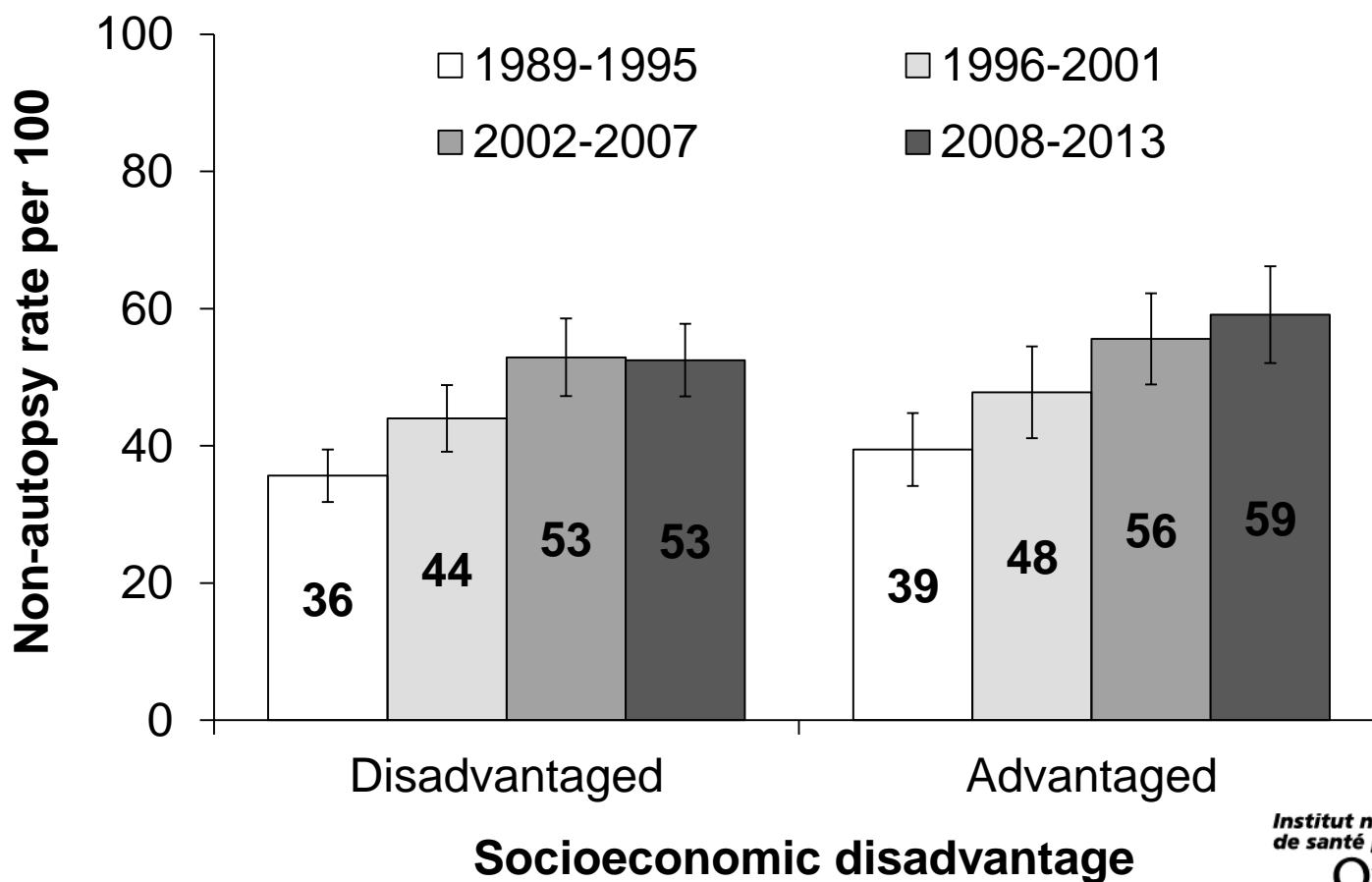
Results (1)

Figure 1 Rate of infant non-autopsy, Anglophones



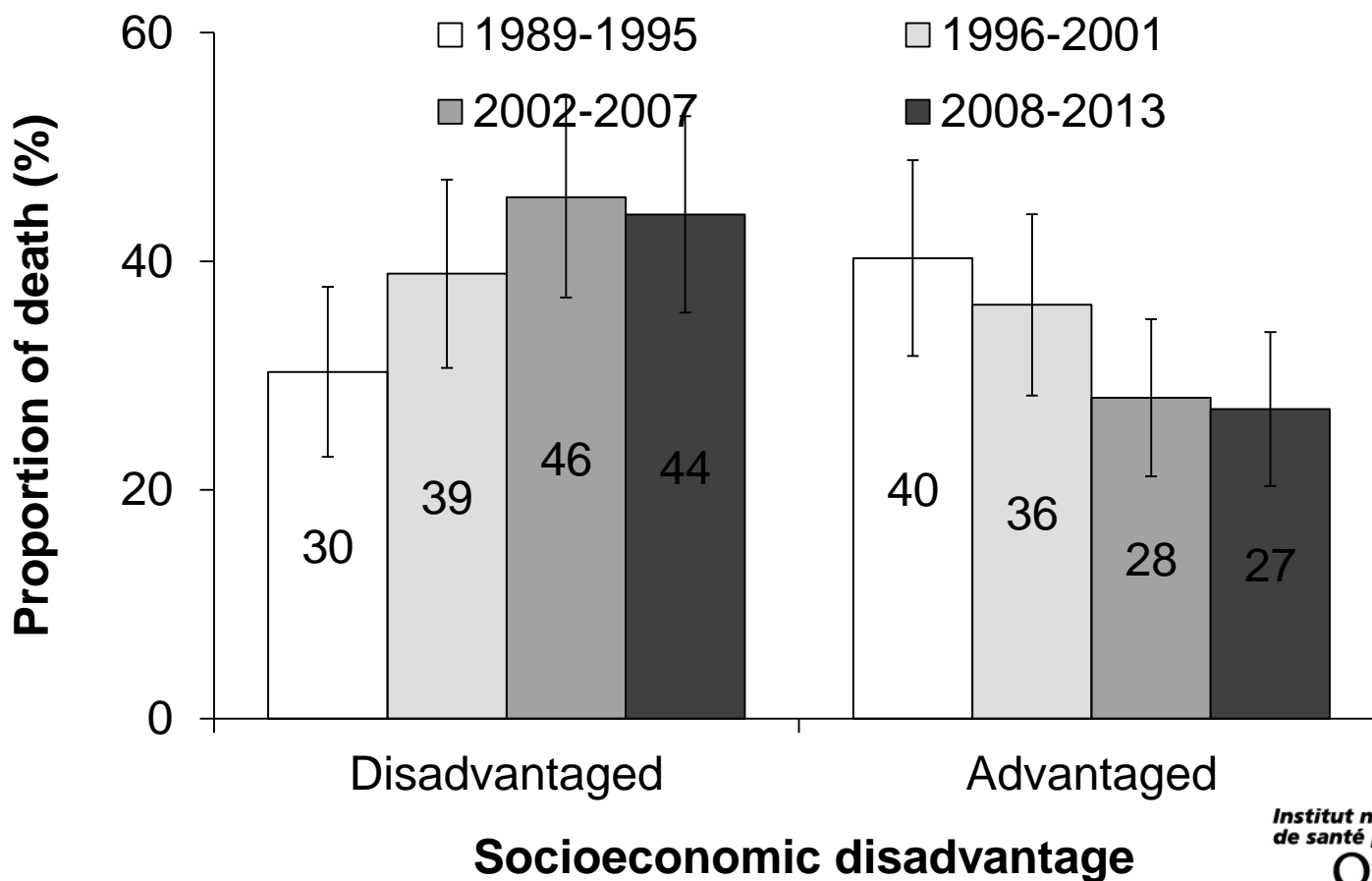
Results (2)

Figure 2 Rate of infant non-autopsy, Francophones



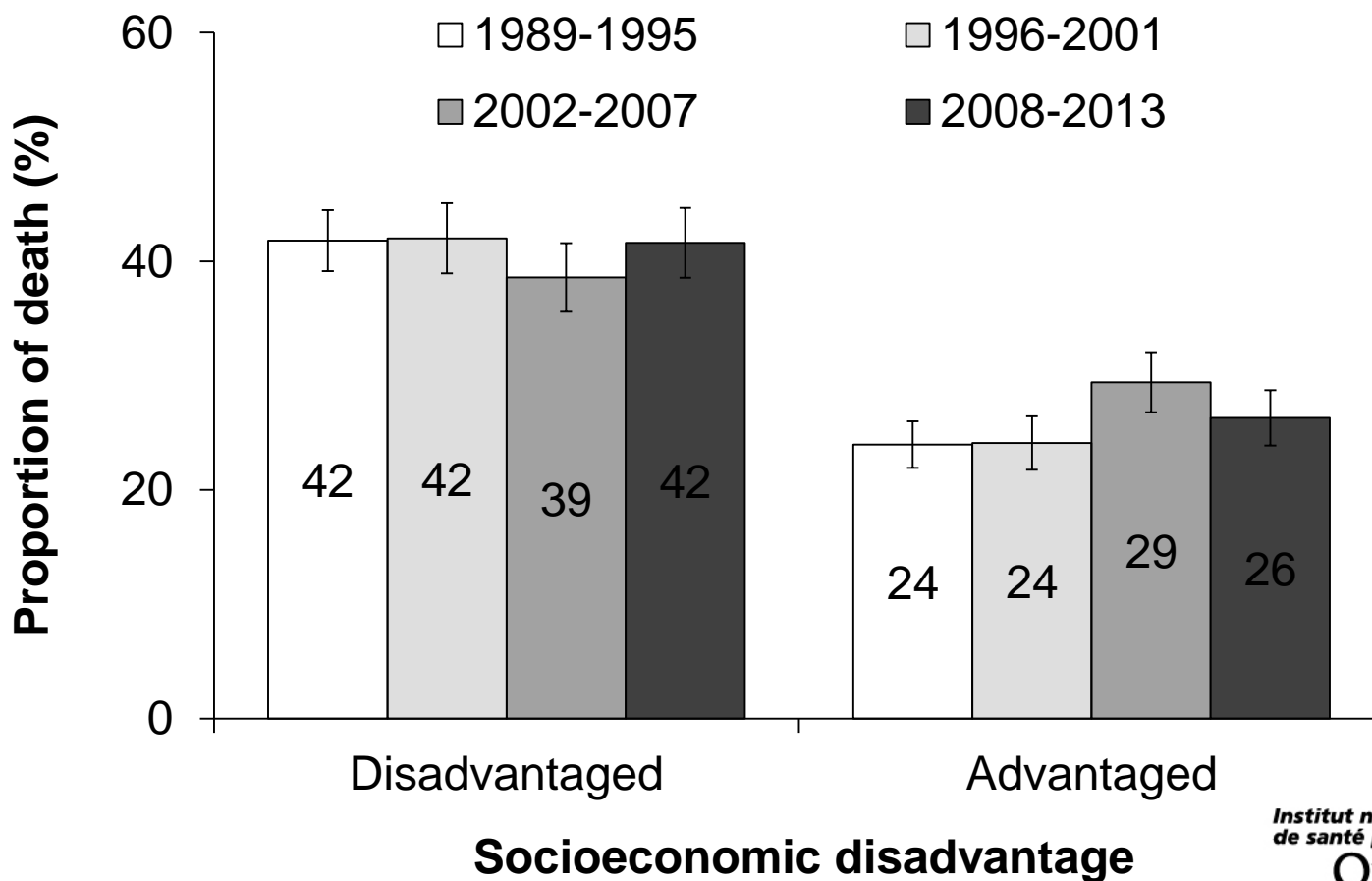
Results (3)

Figure 3 Proportion of deaths, Anglophones



Results (4)

Figure 4 Proportion of deaths, Francophones



Decomposition of the change in nonautopsy rate over time (1)

The non-autopsy rate of a linguistic group can increase for two reasons:


1. Change in non-autopsy rate:

The non-autopsy rate increases in one or all socioeconomic groups;

2. Change in the distribution:

No change in non-autopsy rates in any socioeconomic group, but an increase in the number of individuals in a group with elevated non-autopsy rate.

Decomposition of the change in rate over time (2)



For Francophones and Anglophones, we determined if the increase in non-autopsy rate was attributable to a (1) change in non-autopsy rate among socioeconomic groups, or (2) a change in the socioeconomic distribution of infant deaths.

We used Kitagawa's decomposition method.

Results (5)

Table 1 Change in language distribution between 1989-1995 and 2008-2013

| | Due to change in non- autopsy rate | Due to change in distribution | Contribution to increase in non- autopsy rate (per 100) |
|---------------------|--|-------------------------------------|---|
| Francophones | | | |
| Disadvantaged | 7.0 | -0.1 | 6.9 |
| Advantaged | 4.9 | 1.2 | 6.1 |
| Anglophones | | | |
| Disadvantaged | 7.8 | 6.2 | 14.0 |
| Advantaged | 2.2 | -6.8 | -4.6 |

Recap of results



- Non-autopsy rates are increasing in all socioeconomic groups
- The proportion of disadvantaged Anglophone infant deaths is increasing
- This trend is driving a large part of the increase in non-autopsy rates among Anglophones in Quebec

Limits



Information on presence of autopsy was missing for 7.8%; we assumed that autopsy was not performed.

We did not have information on culture and autopsy preference, and could not account for these potential confounders.

We used a marker of socioeconomic status at the neighbourhood level, not the individual level.

Infant mortality rate is an ecologic indicator, limiting inference to individuals

Key messages




Non-autopsy rates increased over time for both Anglophones and Francophones, but the reason for the increase varied depending on language group.

For Anglophones, the increase in non-autopsy occurred in *disadvantaged* Anglophones.

This pattern was not present in Francophones: the increase in non-autopsy occurred in all socioeconomic groups.

Implications



These results suggest that disadvantaged Anglophones are experiencing a disproportionate increase in infant non-autopsy.

This trend is concerning given evidence from other studies of an increase in infant mortality in disadvantaged Anglophones compared with Francophones.

Infant mortality is an indicator of population health, and strategies to increase the use of infant autopsy in disadvantaged Anglophones may help prevent infant mortality in this group.

Next steps



Why is infant mortality increasing in disadvantaged Anglophones?

Why are fewer disadvantaged Anglophones not having autopsy?

- Less access?
- Less understanding of the importance of autopsy due to language barriers?
- A mixed cultural group with religious beliefs that conflict with autopsy?

Topics for future research



In recent years, we have worked on Anglophones, but our next focus will be Arabic-speakers in Québec.

Arabic is the most important immigrant language, accounting for 18% of foreign languages.

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