Educational Inequality in Stillbirth: Temporal Trends in Québec From 1981 to 2009

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ABSTRACT

OBJECTIVE: Educational inequality in stillbirth has been documented in high-income countries and the province of Québec, Canada, but temporal trends are poorly understood. Our objective was to determine time trends in inequality related to maternal education for all-cause and cause-specific stillbirth over the past three decades in Québec.

METHODS: We included 2,397,971 live births and 9,983 stillbirths from 1981 through 2009 using Québec vital statistics. For each decade, we computed measures of inequality capturing relative (relative index of inequality, RII) and absolute (slope index of inequality, SII) differences between the least- and most-educated mothers for all-cause and cause-specific stillbirth, adjusting for maternal characteristics.

RESULTS: Stillbirth rates decreased over time for all education levels. Absolute educational inequality (SII 2.5 per 1000 births, 95% CI 2.1-2.8; all periods combined) was stable over time, whereas relative inequality increased (RII₁₉₈₁₋₁₉₈₉ 1.8 vs. RII₂₀₀₀₋₂₀₀₉ 2.3). Absolute inequality decreased for stillbirths caused by placental abruption (SII₁₉₈₁₋₁₉₈₉ 0.6 vs. SII₂₀₀₀₋₂₀₀₉ 0.3), but increased for unspecified causes (SII₁₉₈₁₋₁₉₈₉ 0.2 vs. SII₂₀₀₀₋₂₀₀₉ 0.7).

CONCLUSIONS: Absolute educational inequality in stillbirth persisted and relative inequality increased over the past three decades, despite an overall decrease in stillbirth rates. The decrease in absolute inequality for placental abruption was countered by an increase for unspecified causes. A better understanding of the underlying components of unspecified causes is needed to further address educational inequality in stillbirth.

KEY WORDS: Cause of death; educational status; fetal death; socioeconomic factors; stillbirth; trend, temporal

La traduction du résumé se trouve à la fin de l'article.

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Stillbirth, an important contributor to perinatal mortality,¹ is unequally distributed across socio-economic groups.² Educational inequality in stillbirth has been documented in many high-income countries²⁻⁴ and the province of Québec, Canada.^{5,6} What is less understood, however, is how trends in stillbirth-related educational inequality have evolved over time. A Scandinavian study found that educational inequality in stillbirth persisted from 1981 to 2000,⁴ but temporal trends in the last decade, or in other countries, to our knowledge have not been determined. Furthermore, unexplained stillbirths,^{5,7-9} and stillbirths secondary to placental abruption, obstetrical complications, asphyxia,^{5,9} slow fetal growth, maternal diseases,⁵ and non-chromosomal congenital anomalies,^{5,10} are more strongly associated with maternal education, but the lack of data on time trends makes it difficult to determine whether associations vary over time. Temporal trends that vary by cause are plausible. For example, changes in prenatal diagnosis may have influenced specific causes of stillbirth such as congenital anomalies and could have affected trends over time. Temporal trends are important for evaluating policy, programs and interventions aimed at reducing perinatal mortality. A better understanding of temporal trends for the specific causes of stillbirth most associated with maternal education may be particularly informative, since women with less education could be targeted based on the causes contributing most to inequality in stillbirth.

Our objective was to determine temporal trends in inequality related to maternal education for all-cause and cause-specific still-

births over the last three decades in Québec, Canada, as part of a larger effort to understand and ultimately reduce social inequalities. Québec to our knowledge is the only Canadian province that documents maternal education on fetal death registration certificates, and time trends in educational inequality in stillbirth have not been studied in the province.^{5,6}

METHODS

Data and variables

Live births (N=2,454,845) and stillbirths (N=11,233) were obtained from the Québec live birth and stillbirth registries for the years 1981-2009. In Québec, births showing any sign of life at delivery are defined as live births, and intrauterine deaths ≥ 500 g are defined as stillbirths. Multiple births (N=57,660) were excluded due to unique causes in the pathway leading to stillbirth.¹¹ We also excluded 464 intentional terminations of pregnancy (International Classification of Disease (ICD) codes 779.6 (9th revision, before 2000)

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Table 1. Unadjusted Stillbirth Rate per 1000 Births According to Maternal Characteristics, Québec, 1981-2009

	Total Births (Stillbirths)	Rate (95% Confidence Interval)
Maternal education, years		
<11	344,991 (1540)	4.5 (4.2-4.7)
11-13	921,760 (3203)	3.5 (3.4-3.6)
14-15	472,141 (1334)	2.8 (2.7-3.0)
≥16	523,281 (1260)	2.4 (2.3-2.5)
Maternal age, years		
<20	99,650 (559)	5.6 (5.1-6.1)
20-24	508,911 (2204)	4.3 (4.2-4.5)
25-29	915,380 (3334)	3.6 (3.5-3.8)
30-34	636,408 (2425)	3.8 (3.7-4.0)
≥35	247,336 (1388)	5.6 (5.3-5.9)
Legally married		
Yes	1,333,240 (5042)	3.8 (3.7-3.9)
No	1,074,046 (4273)	4.0 (3.9-4.1)
Language		
French	1,891,828 (7622)	4.0 (3.9-4.1)
English	197,068 (794)	4.0 (3.7-4.3)
Other	264,193 (1005)	3.8 (3.6-4.0)
Parity		
0	1,097,214 (5611)	5.1 (5.0-5.2)
1	849,386 (2511)	3.0 (2.8-3.1)
≥2	461,354 (1861)	4.0 (3.9-4.2)
Period		
1981-1989	782,106 (3991)	5.1 (4.9-5.3)
1990-1999	859,543 (3314)	3.9 (3.7-4.0)
2000-2009	766,305 (2678)	3.5 (3.4-3.6)
Total *	2,407,954 (9983)	4.1 (4.1-4.2)

* May not sum to total as missing data are not presented.

or P96.4 (10th revision, 2000 onward)), leaving a final sample of 2,397,971 live births and 9,983 stillbirths. Three periods were analyzed (1981-1989, 1990-1999, 2000-2009), to assess time trends while ensuring a sufficient sample size per period.

Cause of fetal death was determined using the principal cause of death recorded on stillbirth certificates, based on ICD codes. Five categories of mortality were evaluated, including 1) placental abruption or haemorrhage (7021, P021; excluding placenta previa), 2) cord compression (7024, 7025, P024, P025), 3) congenital anomalies (740-759, Q00-Q99), 4) unspecified (7799, P95), and 5) all remaining causes too infrequent to be evaluated separately. These causes were selected based on frequency in our data, and were grouped into clinically relevant categories.

Maternal education, which is recorded on live birth and stillbirth certificates in number of completed years from 0 to 30, was expressed as a continuous cumulative rank score (ranging from 0 to 1) for the main analyses. This score was computed by 1) assigning to the most educated (30 years) a score corresponding to half the proportion of births with 30 years of education, 2) assigning to the next most educated (29 years) a score corresponding to the sum of the proportion of births with >29 years of education plus half the proportion with 29 years of education, 3) and so on for all subsequent educational levels.⁵ To illustrate, assume that 1%, 2%, and 4% of mothers had 30, 29, and 28 years of education, respectively. In this example, mothers with 30 years of education would be assigned a score of $(0.01/2) = 0.005$; those with 29 years a score of $0.01 + (0.02/2) = 0.02$; those with 28 years a score of $0.01 + 0.02 + (0.04/2) = 0.05$; and so on for the remaining education levels. To account for changes in the distribution of maternal education over time, the cumulative rank score was computed for each period separately. Thus, within each period, the value of the assigned rank reflected the cumulative distribution of maternal education specific to that period. In secondary analyses, maternal education was categorized as <11, 11-13, 14-15, and ≥16 years. This categorization

Figure 1. Stillbirth rate (per 1000 births) by maternal education, period, and cause of death, Québec, 1981-2009*

* Rates for imputed data.

reflects the Québec education system, where 11 years are required for a high school diploma, 14 years for a college level trade certificate, and 16 years for a university level bachelor's degree.

Covariates included maternal age (<20, 20-24, 25-29, 30-34, ≥35 years), parity (0, 1, ≥2 previous pregnancies), legal marital status (yes, no), and mother tongue (French, English, other, unknown). Data were missing on maternal education for 143,135 live births (6%) and 2,646 stillbirths (26%), age for 196 live births (<0.01%) and 73 stillbirths (0.01%), and marital status for 668 stillbirths (0.7%). There was little change in the proportion of missing data on education over time. Data were assumed to be missing at random, and were imputed 5 times for each period, based on the distribution of all known covariates (as well as stillbirth status, gestational age, and year of birth) using the SAS multiple imputation (MI) procedure.¹²

Statistical analysis

To achieve our objective of measuring educational inequality, we used the relative index of inequality (RII) and the slope index of inequality (SII) summary measures. The RII represents the ratio in the risk of stillbirth for the least- relative to the most-educated mothers, and the SII expresses the absolute difference in risk between the least- and most-educated mothers. Unlike risk ratios and risk differences for categorical education, the RII and SII use the distribution of education for the whole population, and are obtained by regressing stillbirth against the continuous education rank score, such that their computation is affected by stillbirth rates throughout the education range. Because the rank score ranges from 0 to 1, the parameter estimates for the RII and SII equal the ratio and difference, respectively, in risk between the least and most educated.¹³

The RII, SII, and 95% confidence intervals (CI) for all-cause and cause-specific stillbirth, by period and for all periods combined, were obtained in regression models using the SAS GENMOD procedure for binomial outcomes, specifying a logarithmic (RII) or identity (SII) link and accounting for the added variance due to imputation.¹² Models containing the cumulative education rank score (exposure) and stillbirth (outcome) were initially unadjusted, and subsequently adjusted for maternal age, parity, marital status,

Table 2. Relative Index of Inequality (RII) for Education and Stillbirth by Period, Québec, 1981-2009*

	RII (95% Confidence Interval)				p-value†
	All Periods	1981-1989	1990-1999	2000-2009	
All causes	2.0 (1.8-2.2)	1.8 (1.8-2.2)	2.1 (1.8-2.4)	2.3 (2.0-2.8)	0.05
Placental abruption	2.6 (2.1-3.2)	2.5 (1.8-3.5)	3.0 (1.9-4.8)	2.3 (1.5-3.6)	0.7
Cord compression	2.0 (1.6-2.5)	1.9 (1.3-2.9)	1.7 (1.1-2.8)	2.6 (1.5-4.5)	0.4
Congenital anomalies	1.7 (1.3-2.3)	1.9 (1.3-2.9)	1.6 (1.1-2.5)	1.6 (1.0-2.5)	0.5
Other causes	2.2 (1.9-2.6)	1.8 (1.4-2.5)	2.3 (1.8-2.9)	2.8 (2.2-3.6)	0.03
Unspecified	1.7 (1.3-2.2)	1.3 (1.0-1.8)	1.7 (1.2-2.4)	2.2 (1.5-3.3)	0.04

* Associations for least vs. most educated, adjusted for maternal age, parity, marital status and mother tongue; all-period models additionally adjusted for period.

† p-value for 1981-1989 vs. 2000-2009.

Table 3. Slope Index of Inequality (SII) for Education and Stillbirth by Period, Québec, 1981-2009*

	SII (95% Confidence Interval)				p-value†
	All Periods	1981-1989	1990-1999	2000-2009	
All causes	2.5 (2.1-2.8)	2.8 (2.1-3.5)	2.3 (1.8-2.7)	2.6 (2.0-3.1)	0.6
Placental abruption	0.5 (0.4-0.6)	0.6 (0.4-0.8)	0.6 (0.4-0.7)	0.3 (0.2-0.5)	0.04
Cord compression	0.2 (0.2-0.3)	0.4 (0.2-0.6)	0.2 (0.0-0.3)	0.3 (0.1-0.4)	0.2
Congenital anomalies	0.2 (0.1-0.3)	0.5 (0.2-0.7)	0.1 (0.0-0.3)	0.2 (0.0-0.4)	0.09
Other causes	1.0 (0.9-1.2)	1.0 (0.5-1.5)	1.0 (0.7-1.3)	1.1 (0.8-1.4)	0.8
Unspecified	0.4 (0.2-0.6)	0.2 (-0.0-0.5)	0.4 (0.1-0.6)	0.7 (0.4-1.0)	0.02

* Difference between least and most educated, adjusted for maternal age (<20, 20-34, ≥35 years) and parity (0, ≥1) for convergence; all-period models additionally adjusted for period.

† p-value for 1981-1989 vs. 2000-2009.

and mother tongue. Gestational age was not included in regression models to avoid biasing associations.¹⁴ Time trends in the RII and SII were assessed through pair-wise comparisons between all three periods, using a T-test that accounted for the added variance due to imputation.¹²

To capture temporal trends in stillbirth rates by educational group, we assessed models containing an education-by-period interaction term, with education expressed categorically. For each education group, we obtained risk ratios (RR) and absolute risk differences (RD) for the association between period and stillbirth, adjusted for maternal age, parity, marital status, and mother tongue. RRs and RDs were computed using the SAS GENMOD procedure for binomial outcomes with logarithmic and identity links, respectively.

In sensitivity analyses, models were run excluding births with missing data on education, age, and marital status. Models were also run excluding stillbirths ≥41 weeks of gestation, in the event that greater use of labour induction over time may have influenced temporal trends. Models for stillbirth caused by congenital anomaly were run including terminations of pregnancy, in the event that terminations were due to anomalies. Statistical analyses were performed using SAS 9.3 (SAS Institute Inc., Cary, NC). Ethics approval was waived by the research ethics board of the University of Montreal Hospital Centre.

RESULTS

Mean number of years of maternal education was 12.3 (median 12.0) in 1981-1989, 13.3 (13.0) in 1990-1999, and 13.9 (14.0) in 2000-2009. Stillbirth rates were inversely related to education, ranging from 2.4 per 1000 births for mothers with ≥16 years education to 4.3 for mothers with <11 years (Table 1, unimputed data). Both all-cause and cause-specific stillbirth rates were highest for mothers with <11 years education in all study periods, and tended to decline between the first and last study periods for most causes of stillbirth (Figure 1). Rates of stillbirths with unspecified causes, on the other hand, were stable (most-educated mothers) or tended to increase over time (less-educated mothers).

The overall RII indicated that the risk of stillbirth for the least-educated mothers was twice that of the most-educated mothers (adjusted RII 2.0, 95% CI 1.8-2.2) (Table 2). There was a statistically significant rise in the RII over the study periods, increasing from 1.8 in 1981-1989 to 2.3 in 2000-2009 (p=0.05). The overall SII indicated that mothers with the least education had an excess of 2.5 stillbirths per 1000 births (adjusted, 95% CI 2.1-2.8) compared with the most-educated mothers (Table 3). An excess absolute risk was observed in all periods, and there was no statistically significant change between the first and last period. The SII was lower in the middle period compared with the first and last periods, but the difference was not statistically significant.

Low education was associated with higher risk of stillbirth from all causes in every period, as shown in Table 2 (RII) and Table 3 (SII). The RII was largest for placental abruption, followed by "other causes", while the SII was greatest for "other causes", followed by placental abruption and unspecified causes. Over time, there was a statistically significant increase in relative educational inequality for stillbirth from "other causes"; a decrease in absolute educational inequality in stillbirth caused by placental abruption; and an increase in both relative and absolute educational inequalities for unspecified stillbirth. For stillbirth caused by cord compression or congenital anomalies, there was a statistically non-significant decrease in absolute inequality between the first and the last periods. Unadjusted models led to slightly weaker associations between education and all-cause and cause-specific stillbirth, but yielded similar temporal trends (data not shown).

Figure 2 illustrates the temporal trend in adjusted RRs and RDs for all-cause stillbirth by education group. Between the first and last period, mothers with ≥16 years education experienced the largest relative decrease in stillbirth rates (RR 0.63, 95% CI 0.55-0.82), and mothers with <11 years education experienced the smallest relative decrease (RR 0.72, 95% CI 0.63-0.83). The opposite was observed for RDs, as mothers with ≥16 years education had the smallest absolute decrease in stillbirth rates (1.1 per 1000 births, 95% CI 0.7-1.5), while those with <11 years education had the largest decrease (1.5, 95% CI 0.7-2.2). A statistically significant

decrease in stillbirth was observed for each education group between 1981-1989 and 1990-1999. Between 1990-1999 and 2000-2009, a statistically significant decrease occurred only for the most-educated group.

In sensitivity analyses, models excluding missing data yielded similar findings. There were 448 stillbirths (4.5%) at ≥ 41 weeks of gestation, but no statistically significant difference between education groups, and exclusion of these births yielded similar results. Although educational inequality for stillbirth due to congenital anomalies decreased between the first and last periods, relative and absolute inequality for congenital anomalies combined with terminations of pregnancy rebounded in 2000-2009 to the level observed in 1981-1989 (RII 2.0, 1.6, and 2.0; SII 0.5, 0.2, and 0.6 per 1000 births for the 1980s, 1990s and 2000s, respectively). This trend occurred with an increase in pregnancy terminations (0.02 per 1000 births in the 1980s vs. 0.5 per 1000 in the 2000s), and in rates of stillbirth caused by congenital anomalies/terminations for all education groups over time.

DISCUSSION

This study found that absolute educational inequality in stillbirth persisted in Québec between 1981 and 2009, despite a reduction in the stillbirth rate for all education groups. There was a concomitant increase in relative educational inequality in stillbirth. Most of the reduction in stillbirth rates occurred between 1981-1989 and 1990-1999, with an additional reduction in 2000-2009 for the highest-educated mothers. The contributions of specific causes of stillbirth changed over time, including a decrease in absolute inequality for placental abruption and an increase for unspecified causes. These novel findings are important because they suggest that educational inequality in stillbirth persists in Québec, and that stillbirths of unspecified cause are an increasingly salient contributor to educational inequality.

Maternal education is known to be associated with stillbirth,^{2-6,15} but studies assessing temporal trends in inequalities are few, and existing studies in Québec have not looked at trends over time.^{5,6} Between 1981 and 2000, absolute educational inequality in stillbirth increased in Sweden, persisted in Denmark and Finland, and decreased in Norway.⁴ Though not directly reflecting education, indices of area deprivation used to measure socio-economic status showed that inequalities in stillbirth persisted between 1981 and 2007 in England.^{16,17} Thus, our findings are comparable to time trends documented in Europe.

In addition, we demonstrate that trends in inequalities differ by cause of stillbirth. Absolute inequality in stillbirth due to placental abruption decreased over time in Québec, aligning with abruption-related rates that decreased in all education groups. A similar trend was observed for stillbirths caused by cord compression and congenital anomalies, although the decrease in absolute inequality between 1981-1989 and 2000-2009 did not reach statistical significance. This finding contrasts with England, where area-based socio-economic inequality in stillbirth due to placental haemorrhage (abruption and previa) persisted between 2001 and 2007, whereas no association was found for stillbirth from mechanical causes (cord compression and malpresentation).¹⁷ Differences between England and Québec may reflect varying stillbirth definitions, study periods, social contexts, and health care systems. Decreases in absolute inequality caused by placental abruption,

Figure 2. Stillbirth risk ratio and risk difference (per 1000 births) for maternal education and period relative to ≥ 16 years of education in 2000-2009, Québec

Relative risk (RR), risk difference (RD), and 95% confidence intervals (bars), adjusted for maternal age, parity, marital status and mother tongue.

cord compression, and congenital anomalies in Québec, however, were counterbalanced by an increase in inequality due to stillbirths of unspecified cause. In comparison, educational inequality in “unexplained” stillbirth decreased between 1967 and 1998 in Norway.⁸ However, the ICD definition of unspecified causes may not be equivalent to “unexplained” causes in Norway, where clinical and autopsy data were reviewed to determine the reason for mortality.⁸

All-cause stillbirth, placental abruption, and unexplained stillbirth share a number of potentially modifiable risk factors, including smoking, obesity, and other maternal comorbidities such as pre-existing hypertension.^{2,7,9,18,19} While prevalence of obesity and hypertension increased in Québec in the past decade,^{20,21} smoking prevalence decreased, although socio-economic inequalities persist.²² These risk factors are thought to lie in the causal pathway between education and stillbirth, but it is unclear how their changing prevalence may have influenced trends in educational inequality for stillbirth, particularly as placental abruption-related stillbirth inequalities decreased concomitantly with an increase in unspecified stillbirth inequalities. The extent to which these risk factors mediate trends in educational inequality for all-cause and cause-specific stillbirth over time remains to be determined.

Congenital anomalies are associated with folic acid intake,²³ maternal obesity, pre-existing diabetes,²⁴ and advanced age.²⁵ We found that rates and absolute educational inequality in stillbirth caused by congenital anomaly tended to decrease in Québec, despite an increase in prevalence of obesity and diabetes and the

proportion of pregnancies at advanced ages.²⁶ Mandatory folic acid fortification of cereal products was implemented in 1998 in Canada,²³ but this does not explain the decrease in educational inequality for stillbirth caused by congenital anomalies at the start of the 1990s. A more likely explanation is increased availability of screening and early diagnosis of congenital anomalies, leading to pregnancy terminations. Indeed, the rising proportion of stillbirths with termination of pregnancy recorded as cause of death, along with the fall in proportion of stillbirths coded as congenital anomalies since the 1980s,²⁷ support this possibility. Moreover, our own analyses showed that the rate of stillbirths caused by congenital anomalies/terminations increased over time, such that no decrease in absolute educational inequality was observed for the 2000s compared to the 1980s. The rebound in inequality observed in the last decade may be related to the rise in pregnancy terminations.²⁸ Although terminations may be motivated by reasons other than congenital anomalies, these findings nonetheless suggest that there may have been no change in absolute educational inequality for stillbirth caused by congenital anomaly over time in Québec.

Medical care may be a route through which education leads to inequality in stillbirth from placental abruption and cord compression. Suboptimal care, including delayed recognition of medical problems or inadequate management, is thought to contribute to an important proportion of stillbirths.²⁹ Although Canada provides universal free access to health services, utilization of prenatal services can nonetheless differ across educational groups.³⁰ We found, however, a decrease in absolute inequality for placental abruption and possibly cord compression, which suggests that the contribution of suboptimal care to educational inequality in stillbirth, if any, diminished over time.

Our study had limitations related to use of retrospective administrative data. The validity of ICD coding to determine cause of death is undetermined, and may have led to misclassifications. However, misclassifications are expected to be non-differential by education level. There was a change in ICD coding from the 9th to 10th revision in 2000, and additional changes in coding practices may have occurred over time of which we were unaware. For instance, changes in coding practices may have led to more stillbirths classified as unspecified over time, although such a trend would also be expected to be non-differential by education. Secondary causes of death were not recorded, including underlying reasons for pregnancy terminations. Some terminations may result from prenatal screening for congenital anomaly, which may potentially be more frequent in educated mothers. Although this pathway cannot explain our results (since educated women had lower rates of stillbirth from congenital anomaly/termination of pregnancy), it does illustrate the limitation of lack of data on secondary causes of death. No data were available on maternal risk factors such as smoking, body mass index, comorbidities, or other measures of socio-economic status, such as income and occupation. Due to limited sample size, we could not disaggregate stillbirths of "other causes", or look at finer causes of death categories such as neural tube defects. Québec's definition of stillbirth (≥ 500 g) differs from other Canadian provinces (≥ 20 gestational weeks), but we have no reason to suspect that trends in educational inequality over time would have differed had Québec's definition been based on gestational age. Finally, the causal pathways linking education with stillbirth are unclear, and adjustment for maternal age, parity, mar-

ital status, and mother tongue may not have been necessary, although trends over time were not affected when models were not adjusted for these variables.

Our study found persisting absolute educational inequality in all-cause stillbirth over the last three decades in Québec. While educational inequality tended to decrease for most causes of stillbirth, particularly placental abruption, inequality increased for stillbirths of unspecified causes. To our knowledge, this is the first study to document these temporal trends in Québec. Considering the growing contribution of unspecified causes to overall educational inequality in stillbirth, a better understanding of the underlying components of unspecified causes is needed to further address the education gap in stillbirth.

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RÉSUMÉ

OBJECTIF : Des inégalités de scolarité maternelle pour les mortinaissances ont été documentées dans plusieurs pays industrialisés, mais leurs tendances temporelles sont moins connues. Notre objectif était d'étudier les tendances temporelles des inégalités de scolarité pour les mortinaissances, toutes causes et par cause, pour les trois dernières décennies au Québec, Canada.

MÉTHODES : Nous avons inclus 2 397 971 naissances vivantes et 9 983 mortinaissances du Québec de 1981 à 2009. Pour chaque décennie, nous avons obtenu un indice d'inégalité relatif (« relative index of inequality», RII) et un indice d'inégalité absolu (« slope index of inequality», SII) pour l'association entre la scolarité maternelle et les mortinaissances, toutes causes et par cause, en ajustant pour les caractéristiques maternelles.

RÉSULTATS : Les taux de mortinaissance ont diminué pour tous les niveaux de scolarité. L'inégalité absolue de scolarité est demeurée stable (SII 2,5 pour 1 000 naissances, intervalle de confiance à 95 % 2,1-2,8; périodes combinées), tandis que l'inégalité relative a augmenté (RII 1,8 à 2,3). L'inégalité absolue a diminué pour les mortinaissances causées par un décollement placentaire (SII 0,6 à 0,3), mais a augmenté pour les causes non-spécifiées (SII 0,2 à 0,7).

CONCLUSIONS : L'inégalité absolue de scolarité pour les mortinaissances a persisté et l'inégalité relative a augmenté au cours des trois dernières décennies, malgré une diminution des taux de mortinaissance. Malgré une diminution de l'inégalité pour les décollements placentaires, on observe une augmentation pour les causes non-spécifiées. Une meilleure compréhension des composantes contribuant à ces dernières est nécessaire pour mieux appréhender les inégalités de scolarité pour les mortinaissances.

MOTS CLÉS : cause de décès; facteurs socioéconomiques; mort fœtale; mortinaissance; scolarité; tendances temporelles