



Comparative study of changes in maternal and perinatal morbidity inequalities among migrant and native women over time, between 2008 and 2014 in France

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Variables	
All cases	10
Age, median (range)	62 (50-76)
BMI (Kg/m ²), median (range)	25 (23-30)
Parity, median (range)	2 (1-4)
Ba (cm), median (range)	-1 (-3 to 0)
C (cm), median (range)	+4 (0 to +5)
Bp (cm), median (range)	-2 (-3 to -2)
Prolapse distribution	
Apical alone, n (%)	4 (40)
Combined apical and anterior, N (%)	6 (60)
Apical POP Q* stage, N (%)	
II	2 (20)
III	8 (80)
Anterior POP Q* stage, N (%)	
II	6 (100)

*POP-Q: Pelvic Organ Prolapse Quantification system scores.

Table 1. Demographic and perioperative data

Table 1. Characteristics of women who gave birth in 2008 according to maternal birth place

	Maternal birth place (N)	France (2766)	Europe excluding France (40)	North Africa (84)	Sub- Saharan Africa (74)	Other (74)	p
SOCIO - ECONOMIC STATUS	Age (years)	29.1	29.3	30.7	28.1	28.9	0.002
	Socioprofessional category (%)						<0.001
	Craftsmen, tradesmen and general managers	2.1	0	0	1.4	0	
	Managerial staff or higher intellectual professions	11.5	15	2.4	0	4	
	Middle-level professions	30.1	20	8.3	8	12.2	
	Employees	27.2	12.5	16.7	6.8	9.5	
	Manual	5.2	7.5	1.2	2.7	2.7	
	Unemployed workers	23.9	45	71.4	81.1	71.6	
	Social welfare coverage (%)						
	Standard health insurance	96.1	87.5	89.2	78.4	90.4	<0.001
MEDICAL HISTORY	Universal health coverage (CMU)	2.6	2.5	6	8	5.4	0.002
	Supplementary CMU	1.3	5.0	2.4	2.7	1.4	0.09
	State medical assistance (AME)	0	0	2.4	9.5	1.4	<0.001
	None	0	5	0	1.4	1.4	<0.001
	Smoking during pregnancy (%)	26.6	12.5	4.8	2.7	9.5	<0.001
OBSTETRICAL HISTORY	Body mass index	23.4	22.6	23.9	24.1	23.6	0.006
	High blood pressure (%)	1.3	0	0	1.4	1.4	NS
	Pre-existing diabetes (%)	0.3	2.5	1.2	2.7	0	0.013
	Uterine Myomas (%)	0.7	0	0	4.1	2.7	0.02
	Parity	0.9	0.6	1.2	1.4	0.9	0.008
	Primiparous (%)	45.4	55	36.9	39.2	45.9	NS
	Multiparity with scarred uterus (%)	9.3	2.5	15.5	12.2	17.6	0.02
	Multiparity without scarred uterus (%)	45.3	42.5	47.6	48.6	36.5	NS
	Postpartum hemorrhage (%)	5.1	2.5	2.4	4.1	2.7	NS
	Gestational diabetes (%)	2.1	0	7.1	5.4	2.7	0.02
	Hypertensive diseases (%)	2.3	2.5	0	2.7	1.4	NS

NS, Not Significant

Table 2. Characteristics of women who gave birth in 2014 according to maternal birth place

	Maternal birth place (N)	France (2616)	Europe excluding France (67)	North Africa (105)	Sub- Saharan Africa (128)	Other (85)	p
SOCIO – ECONOMIC STATUS	Age (years)	29.4	30.5	30.9	29.6	29.5	0.002
	Socioprofessional category (%)						<0.001
	Craftsmen, tradesmen and general managers	2.4	3	2.9	0.8	7	
	Managerial staff or higher intellectual professions	13	22.4	2.9	5.5	10.6	
	Middle-level professions	32.4	20.9	6.7	7	9.4	
	Employees	25.1	16.4	18	11.7	9.4	
	Manual	5.7	1.5	1.9	4.7	1.2	
	Unemployed workers	21.4	35.8	67.6	70.3	62.4	
	Social welfare coverage (%)						
	Standard health insurance	87.2	77.6	64.6	41.4	68.2	<0.001
MEDICAL HISTORY	Universal health coverage (CMU)	1.1	3.0	4.8	2.3	1.2	0.005
	Supplementary CMU	11.4	14.9	24.8	42.2	25.9	<0.001
	State medical assistance (AME)	0	1.5	2.9	14.1	4.7	<0.001
	None	0.3	3	2.9	0	0	<0.001
	Smoking during pregnancy (%)	24.0	16.4	2.9	3.1	8.2	<0.001
OBSTETRICAL HISTORY	Body mass index	24.0	23.1	24.1	25.8	23.7	0.006
	High blood pressure (%)	0.9	0	1	1.6	1.2	NS
	Pre-existing diabetes (%)	0.8	0	1.9	1.6	1.2	NS
	Uterine Myomas (%)	0.4	1.5	0	5.5	0	<0.001
	Parity	0.8	0.8	1.1	1.0	1.0	0.02
	Primiparous (%)	48.2	52.2	44.8	37.5	37.6	0.04
	Multiparity with scarred uterus (%)	11.2	14.9	11.4	17.2	14.1	NS
	Multiparity without scarred uterus (%)	40.7	32.8	43.8	45.3	48.2	NS
	Postpartum hemorrhage (%)	4.7	7.5	3.8	2.3	0	NS
	Gestational diabetes (%)	2.9	1.5	6.7	3.1	5.9	NS
	Hypertensive diseases (%)	2.5	4.5	3.8	7	1.2	0.03

NS, Not Significant

Table 3. Comparison of maternal and perinatal morbidity among women who gave birth in 2008 or 2014 according to maternal birth place

Maternal birth place		France	Europe excluding France	North Africa	Sub-Saharan Africa	Other		
MATERNAL MORBIDITY (%)	2008	N	2766	40	84	74	74	p
	Preeclampsia	1.5	0	0	1.3	1.3	0	NS
	Severe preeclampsia	1.4	0	1.2	1.4	0	0	NS
	Eclampsia	0	0	0	0	0	0	NS
	HELLP Syndrome	0.5	0	0	1.4	0	0	NS
	Placenta abruption	0.2	0	0	0	0	0	NS
	Gestational diabetes	3.9	10	8.3	6.8	8.1		0,01
	Pregnancy cholestasis	0.6	2.5	1.2	0	0	0	NS
	Placenta previa	0.6	0	2.4	0	1.4	0	NS
	Uterine rupture	0.1	0	0	0	0	0	NS
	Post-partum hemorrhage	6.9	7.5	7.1	6.8	6.8		NS
PERINATAL MORBIDITY (%)	Severe post-partum hemorrhage	1.6	0	1.2	5.4	1.4	0	NS
	Post-partum infections	0.1	0	0	0	0	0	NS
	Severe prematurity	3.2	5	0	0	2.7		NS
	Birthweight < 3 rd percentile	2	0	1.2	2.7	2.7	0	NS
	Macrosomia	11.7	20	20.2	14.9	9.5	0	NS
	5-minute Apgar score < 7	1.0	2.5	1.2	1.4	0	0	NS
MATERNAL MORBIDITY (%)	Umbilical cord pH <7.10	0.4	2.5	0	1.4	0	0	NS
	Fetal death	0.9	0	0	0	1.4	0	NS
	2014	N	2616	67	105	128	85	P
	Preeclampsia	1.4	3.0	1.9	2.3	0	0	NS
	Severe preeclampsia	1	1.5	1	1.6	1.2	0	NS
PERINATAL MORBIDITY (%)	Eclampsia	0	0	0	0	0	0	NS
	HELLP Syndrome	0.3	0	0	0	0	0	NS
	Placenta abruption	0	0	1	0	0	0	NS
	Gestational diabetes	11.6	11.9	19	13.3	14.1		NS
	Pregnancy cholestasis	1	3	1	0.8	0	0	NS
	Placenta previa	0.6	0	1	0	0	0	NS
	Uterine rupture	0.2	0	0	0	0	0	NS
	Post-partum hemorrhage	9.3	13.4	9.5	10.9	4.7		NS
	Severe post-partum hemorrhage	3.4	6	1.9	5.5	3.5	0	NS
	Post-partum infections	0.1	0	0	0	0	0	NS
PERINATAL MORBIDITY (%)	Severe prematurity	2.9	4.5	5.7	3.1	0	0	NS
	Birthweight < 3 rd percentile	1.5	1.5	1	1.6	0	0	NS
	Macrosomia	11.2	9	12.4	8.6	9.4	0	NS
	5-minute Apgar score < 7	1.6	0	1.9	3.1	1.2	0	NS
	Umbilical cord pH <7.10	0.5	0	0	3.1	0	0	NS
	Fetal death	1.3	1.5	2.9	0	0	0	NS

NS, Not Significant

Table 4. Association between maternal birth place and maternal morbidity among women who gave birth in 2008 or 2014

	p	OR	CI 95%	aOR *	CI 95%
Severe post-partum hemorrhage					
Year of delivery 2014 (Ref : 2008)	< 0.001	2.2	1.5-3.0	2.1	1.5-3.0
Maternal birth place					
Europe excluding France (Ref : France)	0.5	1.5	0.6-4.2	1.4	0.5-3.8
North Africa	0.4	0.6	0.2-2.0	0.6	0.2-1.9
Sub-Saharan Africa	0.03	2.3	1.2-4.3	2.1	1.1-3.9
Other	1.0	1.0	0.4-2.8	1.0	0.4-2.7
Gestational diabetes					
Year of delivery 2014 (Ref : 2008)	< 0.001	3.1	2.5-3.8	3.0	2.5-3.7
Maternal birth place					
Europe excluding France (Ref : France)	0.3	1.5	0.8-2.8	1.3	0.7-2.5
North Africa	0.003	2.0	1.3-3.1	1.9	1.2-2.9
Sub-Saharan Africa	0.3	1.5	0.9-2.3	1.3	0.8-2.0
Other	0.1	1.5	0.9-2.6	1.5	0.9-2.5

OR, odds ratio; aOR, adjusted odds ratio; CI, Confidence interval.

* adjusted for the year of delivery when comparing the maternal birth place and adjusted for the maternal birth place when comparing the year of delivery

Table 5. Comparison of characteristics among migrant women who gave birth in 2008 to those who gave birth in 2014

Year of delivery	2008		p
	N = 272	N = 385	
SOCIO-ECONOMIC STATUS	Age (years)	29.3	30.1
	Socioprofessional category (%)		NS
	Craftsmen, tradesmen and general managers	0.4	3.1
	Managerial staff or higher intellectual professions	4.0	8.8
	Middle-level professions	11.0	9.9
	Employees	11.4	13.8
	Manual	2.9	2.6
	Unemployed workers	70.3	61.8
	Social welfare coverage (%)		
	Standard health insurance	86.3	59.9
MEDICAL HISTORY	Universal health coverage (CMU)	5.9	2.9
	Supplementary CMU	2.6	29.1
	State medical assistance (AME)	3.7	6.8
	None	1.5	1.3
	Smoking during pregnancy (%)	6.6	6.5
OBSTETRICAL HISTORY	Body mass index	23.7	24.4
	High blood pressure (%)	0.7	1.0
	Pre-existing diabetes (%)	1.5	1.3
	Uterine Myomas (%)	1.8	2.1
OBSTETRICAL HISTORY	Parity	1.1	1.0
	Primiparous (%)	42.6	42.1
	Multiparity with scarred uterus (%)	13.2	14.5
	Multiparity without scarred uterus (%)	44.1	43.4
	Postpartum hemorrhage (%)	2.9	3.1
	Gestational diabetes (%)	4.4	4.4
	Hypertensive diseases (%)	1.5	4.4

NS, Not Significant

Table 6. Comparison of maternal and perinatal morbidity among migrant women who gave birth in 2008 to those who gave birth in 2014

Year of delivery	2008	2014	p	
	N = 272	N = 385		
Preeclampsia	0.7	1.8	NS	
Severe preeclampsia	0.7	1.3	NS	
Eclampsia	0	0	NS	
HELLP Syndrome	0.4	0	NS	
Placenta abruption	0	0.3	NS	
Gestational diabetes	8.1	14.8	0,01	
Pregnancy cholestasis	0.7	1.0	NS	
Placenta previa	1.1	0.3	NS	
Uterine rupture	0	0	NS	
Post-partum hemorrhage	7.0	9.6	NS	
Severe post-partum hemorrhage	2.2	4.2	NS	
Post-partum infections	0	0	NS	
PERINATAL MORBIDITY (%)	Severe prematurity	2.6	3.4	NS
	Birthweight < 3 rd percentile	1.8	1.0	NS
	Macrosomia	15.8	9.9	0.03
	5-minute Apgar score < 7	1.1	1.8	NS
	Umbilical cord pH <7.10	0.7	1.0	NS
	Fetal death	0.4	1.0	NS

NS, Not Significant