

## INTRODUCTION

Social and economic factors acting early in life influence the decision-making process for later health related choices.

Women's social and economic position at the moment of delivery had been associated with differences in caesarean section rates, independently of clinical indications. However, there is no research information describing the influence of early life socioeconomic circumstances in the mode of delivery.

## OBJECTIVE

To assess the influence of women's socioeconomic circumstances at 12 years of age on the risk of caesarean section.

## METHODS

Women were consecutively recruited at all 5 public maternities (level III) offering obstetric care in Porto Metropolitan Region (North of Portugal), between April 2005 and August 2006, during the assembling of a birth cohort - *Generation XXI*. Data on social, demographic anthropometric and obstetric characteristics were obtained through face-to-face interview, in the immediate post-partum. Information on delivery circumstances and the newborn characteristics were abstracted from medical records.

Women were excluded if immigrant (n=356), not living with any of the parents at 12 years of age (n=468) and with missing information on questions regarding the socioeconomic circumstances at that age (n=938), the mode of delivery (n=5) or migrant status (n=87). For this analysis we considered 6497 women delivered of a singleton live birth.

Women's socioeconomic circumstances at the age of 12 were assessed considering both financial (house ownership, car ownership, housemaid, and holidays away from home) and scholarly (parental education) dimensions. Women were classified as "Low Financial" (LF) or "High Financial" (HF) if reporting, respectively, up to one or more than one financial assets, and as "Low Education" (LE) or "High Education" (HE) if parents were up to 6 or more than 6 schooling years, respectively. We combined both dimensions in groups: LF-LE, LF-HE, HF-LE and HF-HE.

The risk of caesarean section was computed as odds ratio (OR) and 95% confidence interval (95%CI), using logistic regression models, adjusted for demographic, obstetric and foetal risk factors. Results were presented stratified by current women's education level (<12 vs. ≥12 schooling years) and by current family monthly income (≤1500 vs. >1500 €).

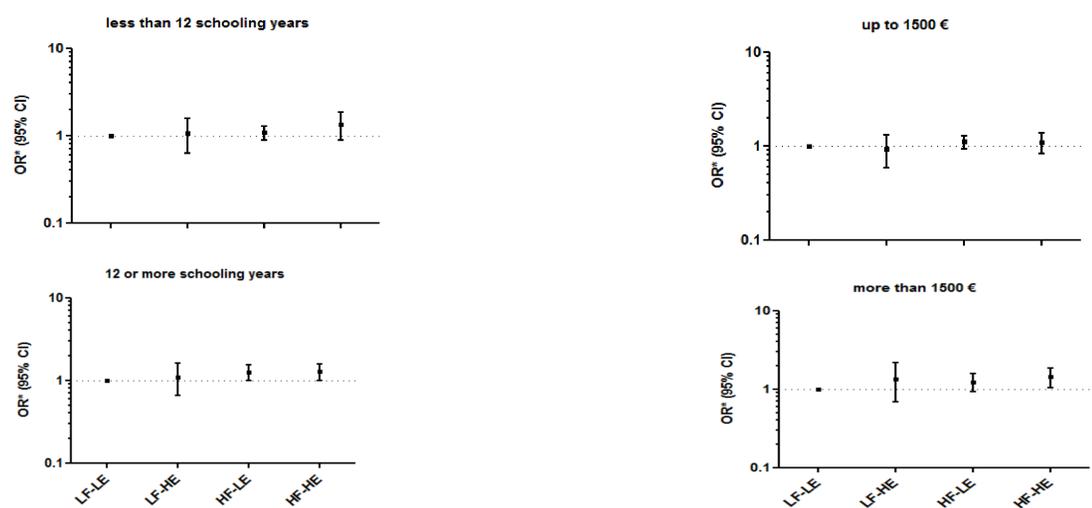
## RESULTS

Women mean age (standard deviation) was 29.5 (5.6) years, 57.4% were primiparous and 12.5% multiparous with previous caesarean section, 31.4% were overweight or obese, 44.2% had 12 or more years of formal education and 28.7% had family monthly income higher than 1500 €. Overall, the caesarean section rate was 35.3%. After adjustment and taking as reference LF-LE women, an excess of risk for caesarean section was observed in HF-LE (OR=1.23; 95% CI: 1.00-1.52) and HF-HE (OR=1.28; 95% CI: 1.00-1.58), among highly educated women and in HF-HE (OR=1.39; 95% CI: 1.05-1.84) among those with higher family monthly income.

### Distribution of women according to the socioeconomic circumstances at age 12

	Socioeconomic Circumstances at 12 Years of Age				p-value
	LF - LE	LF - HE	HF - LE	HF - HE	
	n=3154	n=235	n=2118	n=990	
<b>Maternal age (years)</b>	29.3±6.0	28.5±5.9	29.5±5.2	30.6±4.9	<0.001
<b>Parity and previous caesarean section</b>					
primiparae	1609 (51.4)	197 (60.9)	1319 (62.6)	628 (64.3)	
multiparae with no caesarean section	1119 (35.7)	70 (30.0)	532 (25.2)	220 (22.5)	<0.001
multiparae with caesarean	403 (12.9)	21 (9.0)	256 (12.1)	129 (13.2)	
<b>Body Mass Index (Kg/m<sup>2</sup>)</b>					
<18.5	81 (2.8)	16 (7.5)	65 (3.3)	52 (5.7)	
18.5 – 24.9	1751 (60.6)	141 (65.9)	1309 (67.4)	675 (74.0)	<0.001
25.0 – 29.9	737 (25.5)	39 (18.2)	413 (21.3)	143 (15.7)	
≥ 30	321 (11.1)	18 (8.4)	155 (8.0)	42 (4.6)	
<b>Current women's educational level (years)</b>					
< 12	2459 (78.1)	113 (48.1)	888 (42.0)	158 (16.0)	<0.001
≥ 12	691 (21.9)	122 (51.9)	1224 (58.0)	828 (84.0)	
<b>Current family monthly income (€)</b>					
≤ 1500	2253 (81.5)	141 (66.5)	1160 (61.7)	321 (36.2)	<0.001
> 1500	510 (18.5)	71 (33.5)	720 (38.3)	565 (63.8)	
<b>Caesarean Section</b>					
yes	1021 (32.4)	74 (31.5)	794 (37.5)	403 (40.7)	<0.001

### Risk of caesarean section according to the socioeconomic circumstances at age 12 by strata of current women's educational level and income.



\*Adjusted for maternal age, parity and previous caesarean section, body mass index

## CONCLUSIONS

The mode of delivery is influenced by the socioeconomic position of the woman at age 12. This effect is independent of clinical risk factors, the current educational level or the monthly income. These results support the hypothesis that the decision-making process for mode of delivery is rooted in early socioeconomic circumstances.