CIGARETTE SMOKING CESSATION DURING PREGNANCY AND SUSTAINABILITY 4 YEARS AFTER DELIVERY

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INTRODUCTION

Worldwide, smoking constitutes the single most frequent preventable cause of death. In Portugal, smoking remains more frequent in men but is increasing in women. Among women, the prevalence is higher among younger and more educated women placing Portugal in a relatively early stage of the epidemic compared to other Western European countries.

* Pregnancy is a privileged opportunity in women’s life to promote lifestyle changes.

OBJECTIVES

* To assess the maternal determinants of smoking cessation during pregnancy.
* To study how decisions about smoking cessation during pregnancy evolve 4 years after delivery and evaluate the role of socio-economic position in the sustainability of smoking cessation.

METHODS

Baseline Population-based birth cohort study – Geração XXI. A total of 8405 mothers, who gave birth to 8647 infants were enrolled in the cohort. From those, we excluded 313 who were recruited during the first trimester of pregnancy, since self-report of smoking is expected to change over time during pregnancy.

Follow-up After a median (IQR) follow-up time of 50.8 (range: 48.7-54.6) months, 5513 were re-evaluated. Mothers who attended the follow-up re-evaluation were older, more educated, with higher income, less frequently smokers before pregnancy and more likely to stop smoking during pregnancy than those who did not attend the follow-up re-evaluation.

Statistical analysis

Prevalence ratios (PR) and 95% confidence intervals (95%CI) were estimated by robust Poisson regression.

RESULTS

Characteristics of the participants at delivery:

- Mean age: 30.1 years (range: 13 to 47)
- Married/cohabiting: 95.0%
- Median (IQR) education: 11 (7-15) years
- Household income above 1500€/month: 31.0%
- Prevalence of pre-pregnancy obesity (BMI ≥30kg/m²): 8.8%
- First pregnancy: 48.5%
- Planned pregnancy: 70.5%
- More than 6 prenatal visits: 90.4%
- Pregnancy complications (infectious, placental, hemorrhagic, cardiovascular): 23.2%
- Weight gain during pregnancy above recommended (IOM, 2009): 31.8%

Table 1 – Cigarette smoking cessation during pregnancy

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>n (%)</th>
<th>Crude PR (95% CI)</th>
<th>Adjusted PR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25</td>
<td>139 (45.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-29</td>
<td>141 (47.8)</td>
<td>1.06 (0.99-1.26)</td>
<td>0.86 (0.72-1.04)</td>
</tr>
<tr>
<td>30-34</td>
<td>171 (48.2)</td>
<td>1.07 (0.91-1.26)</td>
<td>0.79 (0.65-0.96)</td>
</tr>
<tr>
<td>≥35</td>
<td>92 (49.2)</td>
<td>1.09 (0.90-1.32)</td>
<td>0.90 (0.72-1.13)</td>
</tr>
</tbody>
</table>

Number of previous pregnancies

0 | 1 | 1 | 1 | 1 |
1 | 162 (47.2) | 0.79 (0.69-0.90) | 0.85 (0.73-0.98) |
≥2 | 77 (37.2) | 0.69 (0.57-0.83) | 0.76 (0.61-0.94) |

Education (years)

< 10 | 230 (59.7) | 1 | 1 | 1 |
10-12 | 177 (50.3) | 1.28 (1.11-1.48) | 1.14 (0.97-1.34) |
≥ 13 | 138 (62.2) | 1.56 (1.36-1.81) | 1.41 (1.16-1.70) |

Household monthly income (€)

<1000 | 173 (41.0) | 1 | 1 | 1 |
1001-1500 | 149 (50.7) | 1.24 (1.05-1.45) | 1.06 (0.89-1.27) |
≥501 | 158 (54.9) | 1.34 (1.15-1.56) | 1.09 (0.90-1.32) |

Household monthly income (€)

<1000 | 173 (41.0) | 1 | 1 | 1 |
1001-1500 | 149 (50.7) | 1.24 (1.05-1.45) | 1.06 (0.89-1.27) |
≥501 | 158 (54.9) | 1.34 (1.15-1.56) | 1.09 (0.90-1.32) |

Pre-pregnancy BMI (kg/m²)

<25 | 358 (46.3) | 1 | 1 | 1 |
25.0-29.9 | 107 (50.5) | 1.09 (0.93-1.27) | 1.17 (1.00-1.36) |
≥30 | 38 (54.3) | 1.17 (0.93-1.47) | 1.37 (1.10-1.71) |

Prenatal visits

<5 | 48 (36.1) | 1 | 1 | 1 |
5-9 | 218 (46.3) | 1.28 (1.00-1.64) | 1.18 (0.91-1.52) |
≥10 | 262 (51.3) | 1.42 (1.11-1.81) | 1.27 (1.00-1.71) |

Smoking initiation age (years)

<15 | 131 (38.4) | 1 | 1 | 1 |
15-17 | 227 (48.8) | 1.27 (1.08-1.50) | 1.31 (1.11-1.56) |
≥18 | 183 (55.5) | 1.44 (1.23-1.70) | 1.40 (1.16-1.68) |

CONCLUSIONS

- Higher educational level was associated with smoking cessation during pregnancy and with the sustainability of this lifestyle change.
- Although almost all women reduced or stopped smoking during pregnancy, more than half returned to their usual consumption level after delivery. This suggests that women are aware of the harmful impact of smoking on reproductive and infant health during pregnancy, which constitutes a strong enough motivation for the effort of stopping smoking at least temporarily. Given the low sustainability of smoking cessation 4 years after delivery and taking into account that concern with the child’s health seems to be an effective motivation to stop smoking for several months, successful educational interventions should probably be focused on the harmful effects of passive smoking on the child’s health after birth.