A Multifaceted Strategy to Implement Brief Smoking Cessation Counseling During Antenatal Care in Argentina and Uruguay: A Cluster Randomized Trial

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Overview

• Tobacco use in pregnancy in Argentina and Uruguay

• Results from cluster - RCT Brief Intervention cessation in pregnancy

• Implications & challenges
Background & Objective

• Argentina and Uruguay implemented TC policies

• National smoking prevalence is decreasing

• Argentina and Uruguay have high prevalence of smoking during pregnancy, particularly in low SES groups

• Pregnant women are not routinely counselled in antenatal care (ANC).

• We evaluated a multifaceted strategy designed to increase the frequency of pregnant women who received a brief cessation counseling based on the 5As.
Background - Context

Source: Encuesta Nacional de Factores de Riesgo, Argentina, Encuesta Continua de Hogares – Uruguay, GATS – Uruguay, GYTS – Uruguay

Background & Objective

• Argentina and Uruguay implemented TC policies
• National smoking prevalence is decreasing
• Argentina and Uruguay have high prevalence of smoking during pregnancy, particularly in low SES groups
• Pregnant women are not routinely counselled in antenatal care (ANC).
• We evaluated a multifaceted strategy designed to increase the frequency of pregnant women who received a brief cessation counseling based on the 5As.
22 clinics assessed for eligibility

20 eligible clinics
7321 eligible women at delivery

2 clinics closed down

Missing consent = 2454 (6.2%)
Missing ID = 6 (0.008%)
Missing CRF = 3 (0.04%)

Allocated to Intervention Group 10 clinics

Allocated to Control Group 10 clinics

Analyzed at baseline
1562 women

Analyzed at baseline
1771 women

Analyzed at follow-up
1783 women

Analyzed at follow up
1732 women

Methods

• Publicly funded clinics, deprived economic sectors

• Primary outcome:
  • frequency of women who recalled receiving 5As

• Secondary outcomes
  • frequency of women who smoked until the end of pregnancy
  • ANC providers’ attitudes & readiness to provide counseling

• Outcomes were measured in a survey within the first 48 hours after delivery, during postpartum hospital stay.

• Smoking status was validated by saliva cotinine

Althabe et al. Nicotine & Tobacco Research, 2016,
Althabe et al. Reproductive Health, 2013
The intervention

- Intervention was tailored by formative research
- ANC providers were trained during a 2-day workshop
- Additional components:
  - reminders, posters, written materials

The intervention

- 2 day workshop:
  - Overview of smoking prevalence and trends,
  - Consequences of smoking for mother & newborn
  - Role of the health care provider
  - 5As intervention, adapted to pregnant women
  - Communication and motivational interviewing skills in several role-play scenarios.
  - Plan to implement the 5As program
Results: characteristics of women

Table 1. Characteristics of Clusters, ANC Providers, and Women at Baseline and Follow-up*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Intervention group (N = 30)</th>
<th>Control group (N = 30)</th>
<th>Intervention group (N = 30)</th>
<th>Control group (N = 30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age &lt;20 years (%)</td>
<td>20.4±4.4</td>
<td>20.8±3.4</td>
<td>24.5±5.1</td>
<td>22.3±8.6</td>
</tr>
<tr>
<td>Primiparous women (%)</td>
<td>33.5±7.1</td>
<td>36.9±7.1</td>
<td>42.4±14.7</td>
<td>41.7±11.3</td>
</tr>
<tr>
<td>Number of prenatal care visits</td>
<td>7.9±1.3</td>
<td>8.0±1.5</td>
<td>7.8±1.5</td>
<td>7.6±1.5</td>
</tr>
<tr>
<td>Recall 1st during prenatal care (%)</td>
<td>41.4±4.3</td>
<td>43.5±4.8</td>
<td>45.6±4.4</td>
<td>41.2±4.0</td>
</tr>
<tr>
<td>Continue smoking during pregnancy (%)</td>
<td>21.9±13.1</td>
<td>21.4±10.0</td>
<td>28.6±14.2</td>
<td>21.4±10.0</td>
</tr>
<tr>
<td>Normotensive</td>
<td>69.3±4.3</td>
<td>69.0±4.7</td>
<td>71.6±3.4</td>
<td>69.0±4.7</td>
</tr>
<tr>
<td>Smoke-free home (%)</td>
<td>68.0±7.6</td>
<td>44.5±9.1</td>
<td>68.0±7.6</td>
<td>44.5±9.1</td>
</tr>
<tr>
<td>Partner/household member smoke (%)</td>
<td>45.6±6.4</td>
<td>42.1±4.0</td>
<td>45.6±6.4</td>
<td>42.1±4.0</td>
</tr>
<tr>
<td>Infant's birth weight &lt;2500g (%)</td>
<td>6.7±2.3</td>
<td>7.5±2.1</td>
<td>6.7±2.3</td>
<td>7.5±2.1</td>
</tr>
</tbody>
</table>

Table 1. Main Characteristics of Pregnant Women by Smoking Status

<table>
<thead>
<tr>
<th>Age (y)</th>
<th>Non-smokers, N = 2288 (92.7%)</th>
<th>Spontaneous quitters, N = 242 (8.5%)</th>
<th>Late quitters, N = 122 (15.6%)</th>
<th>Continued smokers, N = 711 (20.9%)</th>
<th>Total, N = 3400 (100.0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete primary school or less</td>
<td>476 (21.3%)</td>
<td>60 (23.6%)</td>
<td>26 (21.5%)</td>
<td>127 (17.9%)</td>
<td>69 (20.3%)</td>
</tr>
<tr>
<td>Complete primary school</td>
<td>1336 (69.0%)</td>
<td>198 (79.5%)</td>
<td>89 (73.6%)</td>
<td>500 (70.6%)</td>
<td>232 (68.5%)</td>
</tr>
<tr>
<td>Complete secondary school or more</td>
<td>294 (13.0%)</td>
<td>66 (26.9%)</td>
<td>20 (16.5%)</td>
<td>81 (11.4%)</td>
<td>355 (10.3%)</td>
</tr>
<tr>
<td>Work status in past year</td>
<td>354 (15.9%)</td>
<td>53 (20.9%)</td>
<td>17 (14.4%)</td>
<td>327 (46.8%)</td>
<td>433 (12.7%)</td>
</tr>
<tr>
<td>Income</td>
<td>442 (20.9%)</td>
<td>63 (23.5%)</td>
<td>36 (30.0%)</td>
<td>137 (22.6%)</td>
<td>498 (14.7%)</td>
</tr>
<tr>
<td>Education</td>
<td>77 (3.5%)</td>
<td>10 (4.3%)</td>
<td>8 (6.6%)</td>
<td>28 (4.0%)</td>
<td>114 (3.4%)</td>
</tr>
<tr>
<td>Disemployed</td>
<td>1701 (77.2%)</td>
<td>196 (73.5%)</td>
<td>84 (70.0%)</td>
<td>328 (76.6%)</td>
<td>210 (6.2%)</td>
</tr>
<tr>
<td>Live with at least one smoker</td>
<td>1000 (44.0%)</td>
<td>177 (63.0%)</td>
<td>87 (71.9%)</td>
<td>517 (72.0%)</td>
<td>781 (22.2%)</td>
</tr>
<tr>
<td>Tertile of any prenatal care initiation</td>
<td>1322 (52.4%)</td>
<td>157 (53.3%)</td>
<td>62 (53.3%)</td>
<td>342 (52.3%)</td>
<td>1666 (52.3%)</td>
</tr>
<tr>
<td>Second</td>
<td>839 (35.1%)</td>
<td>109 (38.5%)</td>
<td>50 (41.1%)</td>
<td>266 (38.0%)</td>
<td>1263 (37.9%)</td>
</tr>
<tr>
<td>Third</td>
<td>181 (6.5%)</td>
<td>21 (8.2%)</td>
<td>7 (5.6%)</td>
<td>34 (5.0%)</td>
<td>237 (7.0%)</td>
</tr>
<tr>
<td>Number of prenatal care visits</td>
<td>9 (4.0%)</td>
<td>8 (3.2%)</td>
<td>4 (3.3%)</td>
<td>6 (0.8%)</td>
<td>31 (0.9%)</td>
</tr>
</tbody>
</table>

Berrueta et al. Nicotine & Tobacco Research, 2016,
Results: rates of implementation of 5As

The intervention resulted in an overall increase of 17% in the frequency of women recalling the 5As.

However, only one third of women attending intervention clinics recalled 5As in more than one visit.

Results: Rates of cessation

The intervention did not significantly affect the rate of women who continued smoking during pregnancy.
Discussion - Strengths

• Rigorous experimental design
• Careful training of interviewers
• Monitoring of data acquisition
• Data collectors well separated from intervention teams: prevented observer bias of outcomes
• Biochemical validation

Discussion - Limitations

• Interviewing women during the postpartum stay and not during pregnancy could have affected recall of the ANC process, increasing outcome misclassification.

• Social desirability bias in the responses of women interviewed in the intervention group.
Interpretation

- Our findings are consistent with implementation challenges found in clinical practice.

- Interventions that change the existing routines, demand training and new skills, and require substantial organizational changes have been associated with low implementation.

- Quality of intervention?

- Lack of time as a barrier to providing counseling.

In context – Future challenges

- Smoking in pregnancy ↔ Social inequities

- Hard-core smokers

- Need for studies on intensive/multicomponent interventions
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