Socio-demographic and lifestyle factors related to unplanned pregnancies among a large cohort of pregnant women in the Netherlands
A dynamic cohort study

Cecile van der Speld
Inken Landskröner

Institute:
VU Midwifery Science
Verloskunde Academie Amsterdam

Internal supervisor - VAA:
MSc M. Prins

External supervisor – VU Midwifery Science:
PhD J. Manniën
Background

- Worldwide approximately 87 million unplanned pregnancies occur each year (1)

- Important to define women at risk by defining prognostic factors

- Focus on these women in preconception health programs → more cost effective

- Associated with, amongst others:
  - unhealthier lifestyle, inadequate prenatal care, deficient folic acid use, smoking, drug abuse, drinking, class III obesity, low birth weight, preterm birth, low level of education, ethnicity, religion (2-19)
Objective

• The aim of this study was to gain insight into the potential factors related to unplanned pregnancies among a large cohort of low-risk pregnant women in the Netherlands
Methods: design, participants

• Secondary analysis of data from DELIVER study (27)
  • Prospective dynamic cohort study
• Multicenter
  • 20 midwifery practices
  • Pregnant women (adjusted response rate was 62%) were asked to fill in up to three questionnaires
Methods: design, subjects

- In- and exclusion criteria
  - Women who filled in the first questionnaire (of three)
  - Women who answered the question ‘Is your pregnancy planned and/or wanted?’
Methods, variables

The variables included in this secondary analysis were based on literature.

- **Included variables:**
  - Demographic characteristics
  - Health related lifestyle variables
  - The variable ‘pregnancy intendedness’ was dichotomized into planned and unplanned, due to the fact that unwanted rarely occurred.

- **Excluded variables:**
  - Pregnancy related data
  - Pregnancy outcomes
Methods, analysis

• Descriptive analysis to gain insight into characteristics of the study population (table 1).

• Univariable regression analysis, single predicting value

• Multivariable backward logistic regression analysis:
  • Modelling the variable of interest with more accuracy
  • Variables from univariable analysis with a p-value < .20 included
Results

• 6094 (99.8%)
• 17.7% unplanned pregnancies
• The final multivariable model is based on data from 5879 clients
  • 3.5% at least one missing value
## Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>11.2</td>
<td>5.2-24.3</td>
</tr>
<tr>
<td>20-24.9</td>
<td>2.7</td>
<td>2.1-3.5</td>
</tr>
<tr>
<td>25-29.9</td>
<td>1.4</td>
<td>1.1-1.7</td>
</tr>
<tr>
<td>30-34.9</td>
<td>1</td>
<td>Reference</td>
</tr>
<tr>
<td>≥35</td>
<td>1.1</td>
<td>0.9-1.4</td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.1</td>
<td>0.9-1.3</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>Reference</td>
</tr>
<tr>
<td>2</td>
<td>2.8</td>
<td>2.2-3.4</td>
</tr>
<tr>
<td>3</td>
<td>5.7</td>
<td>4.0-8.2</td>
</tr>
<tr>
<td>≥4</td>
<td>23.1</td>
<td>13.1-40.6</td>
</tr>
<tr>
<td>Partner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner – cohabiting</td>
<td>1</td>
<td>Reference</td>
</tr>
<tr>
<td>Partner – living apart</td>
<td>4.2</td>
<td>2.9-6.3</td>
</tr>
<tr>
<td>No</td>
<td>6.6</td>
<td>4.1-10.6</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>1</td>
<td>Reference</td>
</tr>
<tr>
<td>Not working</td>
<td>1.5</td>
<td>1.3-1.9</td>
</tr>
<tr>
<td>Student</td>
<td>3.5</td>
<td>2.2-5.5</td>
</tr>
<tr>
<td>Other</td>
<td>1.6</td>
<td>1.1-2.3</td>
</tr>
<tr>
<td>Region in the Netherlands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>1.1</td>
<td>0.8-1.4</td>
</tr>
<tr>
<td>East</td>
<td>1.4</td>
<td>1.1-1.7</td>
</tr>
<tr>
<td>South</td>
<td>1</td>
<td>Reference</td>
</tr>
<tr>
<td>West</td>
<td>1.5</td>
<td>1.1-1.9</td>
</tr>
<tr>
<td>Foreign descent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indigenous</td>
<td>1</td>
<td>Reference</td>
</tr>
<tr>
<td>1st generation western</td>
<td>2.0</td>
<td>1.4-2.8</td>
</tr>
<tr>
<td>2nd generation western</td>
<td>1.1</td>
<td>0.7-1.5</td>
</tr>
<tr>
<td>1st generation non-western</td>
<td>1.2</td>
<td>0.9-1.6</td>
</tr>
<tr>
<td>2nd generation non-western</td>
<td>1.0</td>
<td>0.7-1.5</td>
</tr>
<tr>
<td>Religion</td>
<td>1.4</td>
<td>1.2-1.7</td>
</tr>
<tr>
<td>Smoking</td>
<td>1.3</td>
<td>1.1-1.6</td>
</tr>
<tr>
<td>Using hard drugs</td>
<td>1.5</td>
<td>1.0-2.3†</td>
</tr>
</tbody>
</table>

Variables removed: Paired gravidity and parity, BMI, The impression to have influence on once own health, Education level, Soft drugs, Alcohol.

† Statistically significant, 1,010 before rounding.
Discussion

- Consensus with literature
  - Association with age (10,16,18-21)
  - Being unemployed (20) – low education/income (10,16,19,20)
  - Living alone, being single (18,20,21)
  - Multiparity (10,11,20)
  - Foreign descent (10,16,18,19,21)
    - Western descent vs non-western women (10,11,16,21)
  - Smoking behavior (10)
  - Religion (8,22)
Discussion

• Secondary data-analysis, questions were not addressed for our specific study question
  • Missing data and possible relevant factors (e.g., contraceptives, abortion, recurrence of unplanned pregnancy)

• Study limitations
  • Defining pregnancy intendedness
  • Social desirability

• Bias
  • Terminated pregnancies
Discussion

• Strength
  • Assessment of pregnancy intention occurred during pregnancy
  • Large population
    • Representative for the low-risk pregnant women living in The Netherlands regarding age and parity.
    • Overrepresentation of native Dutch women and high educated(26)
Recommendations

• Increasing knowledge might prevent unplanned pregnancies (41)
  • Family planning
  • Chances of getting pregnant
  • Risks of unplanned pregnancy
  • Fertility

• Key figures
  • Secondary education
  • General practitioners

More research needs to be done focusing on the follow-up of unplanned pregnancies and the outcomes. These data might help to specify the midwifery care to the needs of unplanned pregnancies.
Literature

Literature

- Van der Zee B, de Beaufort I, Steegers EAP, Denktas S. Perception of preconception counseling among women planning a pregnancy: a qualitative study. Family Practice Advance Access 2012;11